



THE Portable Paper

Chess, Taxes, and WordPerfect Print Preview for Portable Plus Users

Speed Up Vectras With DOS 4.01

Hidden 110 and Portable Plus Capabilities

Brief Look Inside HP

Publisher's Message	3	MS-DOS 4.01, Making the LS/12 Faster	16
Letters	3	Removing the Portable Vectra's Screen	18
110%		Stuck Interlock Switch on LS/12	18
Do Your 1989 Taxes Your HP Portable	6	Diagnostic Software for GM Automobiles	19
Hidden, Important 110 and Portable Plus Keys ..	8	Get HP BASIC on a PC with HTBasic	24
Charging Batteries on the Portable Plus	10	Zenith SupersPort to Sell Through Sears	24
MS-Word Printer Drivers for the Portable Plus ...	12	Update on Valitek Tape Backup System	24
More on HP's Decision to Discontinue		Parallel Port Expansion Chassis	24
Portables, Ambiguity About Future	13	Receive FAX's on Your HP LaserJet	24
Tough Testing at HP	13	News From Personalized Software	
Tough Times for HP's No-Layoff Policy	14	Chess and Other Games for The Portable Plus ...	25
Steve Martin -- a "Wild and Crazy" HP Fan	14	We Are Now Set Up to Repair or Upgrade Your	
Simple Backup Procedure for 110 and Plus	37	HP110, Portable Plus, or HP150 Equipment	26
SmallTalk On the Portable Plus	37	Spring Sale	26
Vectra 486 -- More Powerful Than a Mainframe ..	37	HP150 Catalog	26
Non-Volatile RAM Disks For PC Compatibles ...	37	Print Preview Driver for WordPerfect on Plus ...	26
Acoustic Modem Adapter	38	No Weltec Serial Hard Drive For Portable Plus ..	28
Battery Technology Advances	38	WorldPort FAX	28
Airport Security Appreciates HP Portables	39	Plus Tech Manual Available Again	29
Lap-Top Survival Kit	39	New Version of Squish Plus	29
Cover the Hole in the High Density Disk	42	Volume Five Binder for Portable Paper	30
Laptop Car Seat	42	T/Master and T/Maker Discontinued	30
Small, High-Performance Hard Disks	42	The Savvy User	31
Portable Vectra Views		User Groups	43
LS/12's Sold Out, Parts May Be Hard to Come By	16		

Personalized Software Products and Services in Brief:

SYMBOLS: 110 = HP110 P+ = Portable Plus PV = Portable Vectra

WORD PROCESSING

110 P+ PV LS 150

The Editor II

Many features not in MemoMaker, including search/replace, editing 2 files at once, embedded printer codes, up to 255 columns per line and block centering and macros. Does word wrap, right justify. Easy to use. Uses less than 40 K. Versions for HP110, Plus, HP150 Vectra and IBM PC all on master disk.

110 P+ PV LS 150

VI

UNIX-style editor.

P+ PV LS 150

Word Perfect 5.0 (and 4.2)

World's best-selling word processor, customized to P.Plus. Dozens of advanced features, including fonts, integrated text and graphics, style sheets, document compare, text in columns, footnotes, tables of contents, indexes, 115,000 word speller, thesaurus, mail-merging, built-in math functions. P.Plus version comes with PlusPerfect, our own IBM PC emulator that allows WordPerfect to run on the Plus. Optional ROM Backup saves 384K of RAM.

WORD PROCESSING UTILITIES

110 P+ PV LS 150

The Formatter

Sophisticated text formatter for large reports, program documentation, etc. Multiline headers, footers, page numbers, table of contents, glossary capabilities, more. Works on MemoMaker, The Editor files. (Manual in draft form: no technical support available.)

P+ 150

Format Plus

An integrated word processing command center for the Portable Plus. Let's you run your word processor, spelling checker, and other applications from a single easy-to-use program. Also lets you do headers, footers, lines per page, automatic page numbering and more.

110 P+ 150

HPPrint

Prints text (MemoMaker, ASCII) files and prints them on an HP Printer. Comes with italic type font for ThinkJet. Also allows bold, underline, compressed, expanded, subscripts, superscripts, headers, footers, page numbering, double space, mail merging, and it lets you create your own graphic characters.

110 P+ 150

PrinterTalk and Format110: MemoMaker Enhancers

PrinterTalk lets you change type styles in middle of document, number of copies, and lines per page; do automatic page numbering, more. Format110 lets you format headers, footers, and page numbers; chain or merge documents; compensate for "widow" and "orphan" lines and much more.

110 P+ PV LS 150

RightWriter

Flags errors in grammar, style, usage and punctuation, inserting comments directly into your document. Also, produces overall critique. Works with most word processors. Also available: RightWords dictionary extension utility: it has 7 auxiliary dictionaries (business, computers, engineering, etc.), and also lets you add words of your own to RightWriter's built in dictionary.

P+ PV LS 150

Webster's Spelling Checker

Rated Editor's choice by PC magazine, Webster's packs a 110,000 word dictionary into 207K of disk memory. Webster's shows you incorrect spellings in context and suggests corrections, lets you preview questionable words before you edit. Exceptionally easy to use. Customized for the Plus and HP150.

110

The Word Plus

Excellent spelling checker with a choice of two dictionaries: 45,000 words and 35,000 words - plus ability to input additional words of your own. Also does word counts. Great for HP110.

UTILITIES TO BOOST YOUR PRODUCTIVITY

P+

BacTools Disk

Contains a wide range of utilities to help you back up files from a 1 Megabyte or larger Edisk onto floppy disks. Lets you back up selected files, automate the entire backup process, and more.

110 P+ PV LS 150

DOS Tools

Well over 50 excellent public domain programs that enhance DOS, all tested on the Portables. Documentation has been rewritten for clarity for ease of use, and includes examples, index, and table of contents.

P+ PV LS 150

FilePlus: File Management

Lists the files in two directories simultaneously. You can tag multiple files and perform actions (such as copy, delete, move, etc.) on all the tagged files at once, without having to use P.A.M. or DOS.

P+

Games (Chess + 9)

Chess, Go-Moku, Othello, FastMind, Yahtzee, Tic-Tac-Toe, Fox & Hounds, Concentration, Landmine, HP-Amateur customized for Plus. ROMs includes TigerFox, 1st 4 listed above.

110 P+ PV LS

Link HP-IL

A software program that lets you transfer data from any HP-IL device to any other HP-IL device. Now you can access your main computer (HP Portable, HP150, or IBM PC) its unlimited storage capability, and all its peripherals from your HP41,71,75 or series 80!

110 P+ PV LS 150

The Norton Utilities

Allow you to recover deleted Portable files and organize your electronic and external disks. Peter Norton has authorized us to include an extra 3 1/2" disk (formerly only available on 5 1/4" disk). The disk includes The Norton Utilities, and instructions for running them on the Portables and the HP150. Version 4.0 and the advanced edition are now available.

110 P+ PV LS 150

1987-90 Subscribers Disks

Available only with Portable Paper subscription

1987 includes: (1) DISKPACK, a disk-packing utility, commercial equivalent sells for \$ 50 (2) Time Manager calendar utility. (3) HP Calculator program. (4) Game, Lotus templates 1988 includes (1) Time Manager mail-merge utility. (2) Great public domain software for Vectra. (3) password protect program (4) Xmodem program for P.Plus. (5) Lotus templates. (6) Games. (7) DOS Tools. (8) HP to Alternate mode toggler, (9) Lots more.

1989 includes: (1) File manager utility that lets you tag files for mass copying and deleting. (2) File compressor (3) New RAM-based Time Manager with Week-at-a-glance screen. (4) Compuserve Automation program. (5) A menu program easier to use than PAM (6) Fast file finder (7) Directory lister (8) More.

1990 includes: (1) Best file compression / archiver, (2) Wordstar work-alike editor, (3) LS/12 DOS extender, (3) Quick unerase util, (4) Space saving & DOS utils, (5) Great Russian game, (6) Text search util (7) Much more

P+ PV LS

PrintMaster

Allows you to use your HP Portable and ThinkJet to produce logos, invitations, banners, and other graphics. Customized for Port. Plus.

110 P+ PV LS 150

Private File

Protects letters, documents, data files by scrambling your file. Your password unscrambles.

P+

Shelp

From within almost any program, Shelp gives you immediate access to a notepad and calculator and lets you define up to 26 keyboard macros - that is, assign up to 31 character to a single keystroke. Written for Portable Plus.

P+ PV LS

Squish Plus

Automatic file compression program that as much as much as doubles available disk space. If you know how to save and retrieve files from your application, you know how to use Squish Plus. Available on ROM.

110 P+ PV LS

Tiger Fox

A great video game of changing mazes and double pursuit designed for the Portables.

110

Time Manager

The highly acclaimed Portable Plus ROM-based Time Manager program in a 3 1/2" disk version for the HP110 Portable. Does not run on Portable Plus. (Available to Portable Paper Subscribers only.)

110 P+ 150

Typing Whiz

Better than almost any typing tutor program on the market - designed specifically for The Portables and the HP150, Immediate Numeric and graphic feedback or your progress.

FILE TRANSFER MADE EASY

PV LS

LapLink

A software program for high speed transfer of files between your Vectra CS or LS/12 and IBM PC or compatible. Versatile (works with parallel and serial ports), easy to use (simple manual or automatic file tagging).

110 P+ PV LS 150

Disk Conversion Service

We will convert your data to and from single sided, double sided, high density 3 1/2" and 5 1/4" inch formats at a reasonable cost.

P+ PV LS

HPDuette

A software program that lets you transfer files back and forth at high speed between your Portable Plus and an IBM PC or compatible desktop computer - without the need for HP-IL card. Comes with proper serial cable.

110 P+ PV LS 150

ReadHP

This software program allows an IBM compatible computer with a 3 1/2" disk drive to read and write to HP formatted disks.

COMMUNICATIONS

110 P+ PV LS 150

CompuServe Starter Kit

Starts you on Electronic Information Service, CompuServe (which includes the HP Forum). Includes \$25 worth of free time and CompuServe's monthly magazine, Online Today.

P+

Relay Gold 2.0

Only P.Plus RAM-based communications package that handles both file transfer and terminal emulation. This popular IBM PC program, modified for the P.Plus, is easier, more powerful than Reflection. Lets you access electronic bulletin boards, allows for unattended file transfer, supports distributed processing, more. Beginners find it easy to learn, yet can handle the most sophisticated data transfer tasks.

110 P+

Term110, TermPlus

Exceptionally easy-to-use alternatives to HP110 Terminal and P.Plus PC2622/Reflection. Both Term110 and TermPlus allow you to send and capture ASCII information. Both offer fast XMODEM transfer of programs, Lotus worksheets, and archive files. Both offer auto-logon, dialing directories, on-line help, ability to run other programs while phone still connected.

110 P+ PV LS 150

WorldPort Portable Modems

The WorldPort 2400, WorldPort

2400 / MNP and the WorldPort

1200 are battery powered, highly compact (4"x2"x1"), lightweight (6.5 oz), full featured external modems that transmits data at 300, 1200, and 2400 baud. Fully compatible with industry standard Hayes AT Command Set, and with both CCIIY and Bell standards.

SPREADSHEET ENHANCERS

110 P+ PV LS 150

101 Macros for Lotus 1-2-3

Useful in themselves and as learning tools for novice and experts alike. Includes: recalculating ranges, double spacing spreadsheet prior to printout, hiding notes next to data cells, addressing form letters, and printing labels automatically. customized Lotus 1A and 2.01.

110 P+ PV LS 150

SideWinder

This program allows you to print your spreadsheets (or other text file) sideways on your ThinkJet. This means you can print your 60 column by 53 row spreadsheet Portable as one long printout without cutting or pasting.

P+

Lotus 123 in RAM Driver

Utility allows you to run Lotus 1-2-3 or Symphony from RAM or disk rather than ROM.

PROJECT MNGMENT

110 P+ PV LS 150

2 Project Management Packages

Milestone is for small to medium projects - bit awkward on HP110). **Pertmaster** larger projects - specify which machine.

DATABASE, STATISTICS & ACCOUNTING

110 P+ PV LS 150

Condor 3 and Condor Jr.

Easy-to-use database programs customized for the HP Portables. Enter data, sort, search, manage files, and print address labels with ease. Condor, Jr. for the HP110 allows limited report writing, and is highly memory-efficient. **Condor 3** for Plus, Vectras, and HP150 is a fully "relational" system, allowing you to combine data from two or more files. It includes advanced report generating capabilities, data transfer with Lotus 1-2-3, and more.

P+ 150

Dac-Easy Accounting V 1.0

Popular, powerful, yet inexpensive accounting package. General Ledger, Accounts Receivable, Accounts Payable, Purchase Orders, Billing, Inventory, Forecasting modules are all fully integrated. Easy-to-use menu-driven system. Generates numerous journals, aging reports, balance sheets, and more. Supplies limited.

P+ PV LS 150

Statistix

Easy to learn and use comprehensive statistical package. Data can be entered from the keyboard or imported from spreadsheet or database files. Includes multiple regression, most standard parametric and non-parametric tests, p-values, plots, histograms, and much more.

PROGRAMMING

110 P+ PV LS 150

Turbo Pascal 5.5

IBM PC version of compiler (with OOP) adapted for Plus, HP150. Includes our TurboPlus Integrator that lets you easily go between your text editor and the Turbo Pascal compiler.

110 P+

Turbo Optimizer For v3.0

Saves run time and storage space by making your Turbo Pascal 3.0 programs 10-30% faster and 15-50% smaller. For Version 3.0 only.

GRAPHICS

P+ PV LS

Flowcharting II+

Creates profession-looking flowcharts and organizational charts using 26 flowchart symbols in 95 sizes. Wide variety of text fonts for creating labels. Easy to add and delete lines without disturbing the rest of the flowchart. Shrink Screen feature lets you view up to 14"x11" chart on 25 line screen.

P+ PV LS

Logitech Mouse for Port. Plus

3 button mouse bundled with our propriety Portable Plus Mouse Software and cable. Using the mouse to move the screen cursor makes using your Plus easier and more fun. Logitech was rated Editor's choice by PC Magazine.

110 P+

Sketch

Lets you draw free-form using cursor keys. Also draw lines, boxes, circles by pressing a single key. Entire screen can be printed on ThinkJet at virtually any enlargement.

ACCESSORIES

110 P+ LS

Targus & Fieldpro Cases

Roomy, rugged, high quality, highly padded cases to protect HP Portable, portable printer or disk drive when traveling.

P+

External Numeric Keypad

Allows fast numeric entry from Lotus & other applications. Attaches to Plus via serial port.

110 P+

HP9114 Empowerer

A hardware product that prevents the HP9114 disk drive from running out of juice in the middle of your work. Plug Empowerer into your HP9114 and into a normal wall outlet, and you can run your HP9114 forever.

110 P+

Mobile Recharger

Lets you recharge your HP110, Portable Plus, ThinkJet, HP9114, HP hand-held etc. from your cars cigarette lighter.

110 P+

Power Cube

Powers and recharges up to three HP devices (HP110, Portable Plus, ThinkJet, HP9114, HP hand-held, etc. from a single wall outlet.

110 P+ PV LS

3 Ring Binders for Back Issues

Handsome printed 3-Ring binders for back issues of The Portable Paper. Specify Volume number (1-5) or all.

VECTRA CS AND LS/12 PRODUCTS

PV LS

LapLink

Transfers files to PC. See "File Transfer Made Easy" at top of previous page.

LS

1 Meg, 4 Meg EMS Memory

Expansion memory for your LS/12.

110 P+ PV

HP-IL Card for Portable Vectra

Fits in adapter slot. Functions like IBM PC HP-IL card, allowing transfer of data to HP-IL devices like the HP9114, HP110, Portable Plus.

PV LS

EtherNet Adapter

Pocket EtherNet Adapter connects to parallel printer port of the LS/12, Vectra CS, or compatible; allows connection to an Ethernet or IEEE 802.3 LAN. Adapter supports Novell NetWare versions 2.0a and higher, is the size of audio cassette tape holder, weighs 5 oz.

LS

Expansion Chassis

LS/12 AC Expansion Chassis (from Zenith) supports up to 3 XT compatible cards (for EGA or VGA graphics, addition I/O ports, EMS memory, networking, etc.). Requires qualified technician to install 68-pin connector in LS/12.

110 P+ PV LS 150

Kodak Diconix 150 Plus Printer

Battery powered inkjet printer; hardback dictionary sized. Draft and Quality modes. Panel or software controlled fonts include: pica, elite, condensed, super/subscript, underline, italic, emphasized, proportional, enlarged / condensed, double strike, double-wide.

LS

LapTape Tape Backup Unit

Tallgrass Technologies tape backup unit for backing up LS/12 20 or 40 Meg hard disk. Connects via floppy disk connector. Vol 4:4:24

PV LS

NoSquint

Turns hard-to-read underline cursor into easy-to-read block cursor. Vol 4:4:24.

LS

Numeric Keypad

Zenith numeric keypad for adding machine-style numeric entry plugs into LS/12 right side

110 P+ PV LS 150

StatPower Pocket Power Inverter

Plug your LS/12 or Portable Vectra CS recharger into this 1 lb, 4.5" x 3.5" x 1.3" unit. Plug the StatPower unit into your car's cigarette lighter and recharge your battery. Vol 4:3:14.

PV

Traveldisk Portable Hard Drives

External, 10 to 250 MB, rugged, portable hard drives. Uses bus extender card designed for P.Vectra CS. Can use same drive with PC.

PV LS

Valitek Tape Backup Unit

60 or 160 MB tape backup unit that connects to any PC via the serial or parallel port.

LS

Weltech 5 1/4 Inch Disk Drive

5 1/4" disk drive that plugs right into the LS/12 external drive port. Vol 4:4:19.

PV LS

Weltech PhD Serial Hard Drive

20 MB battery charged hard drive that connects to serial port. Vol 4:5.

PV LS

WorldPort 2496 Fax & Modem

Battery powered, portable fax and 2400 baud modem connects to serial port. CCITT. Vol 4:5.

UPGRADES/REPAIRS

110 P+ 150

Repairs

We'll fix your HP110, Portable Plus, ThinkJet, HP9114, HP150 at reasonable prices.

P+

FastPlus

By installing faster processor and increasing the clock speed of your Portable Plus, you can run Lotus 1-2-3 and other applications 60% faster than before. Our trained technicians perform the upgrade and can have Plus back to you the next day. Call for appointment.

P+

128K/256K to 512K Upgrade

If you have Portable Plus model 45711A, B, C, or D, we'll upgrade your unit from 128K or 256K to 512K. Call for appointment.

Software on ROM

Best-selling programs available on P.Plus ROM chips via our ROM Back-up service. Saves valuable electronic disk space, minimizes need for disk drive.

Used HP Portable Equipment

HP110s, P.Plus's, HP9114s, ROMs, RAM drawers. HP quality makes used HP products a great buy. 30-day return policy plus one-year guarantee (parts and labor).

Video: How to Use 110, P.Plus

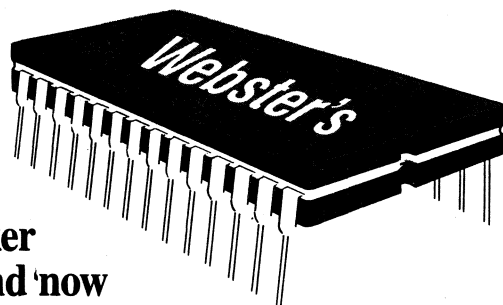
5-hour, 3 VHS videotapes. Contains fundamentals of using HP110, Portable Plus. Saves countless hours learning or training others. For novices and intermediate users.

Products advertised or discussed in this issue

Acoustic Modem Adapter	38
Diacom	19
Editor II, The	9
Empowerer	32
Ethernet Adapter	17
FastPlus	4,39
FilePlus	33
Formatter, The	9
Games Disk for Plus	25
HPDuet	13
HP Professional	41
HTBasic	24
JetFax	24
LapLink	17
LapTape Tape Backup	17
Laptop Survival Kit	39
Mobile Recharger	36
Norton Utilities	27
NoSquint	17
Numeric Keypad	17
Portable Plus	Back cover
Power Cube	40
Read-IP	38
Repair of HP's	11,26
ROM Backup	20,21
Shelp	19
SideWinder	15
Sketch	15,36
SquishPlus	4,7,29,34
StatPower PC100	17
TaxPad 89	6
Term110/TermPlus	35,43
Used Computers	15
VALITEK Tape Backup	24
Webster's Speller	2
Weltech 5.25" Drive	17
WordPerfect 5.0	26,44
WorldPort	17,28,29

PRICE LIST Center Spread

Portable Plus users: At last! A great spelling checker available on ROM!



Webster's (web'stərs) n. The spelling checker rated Editor's Choice by *PC Magazine* (Dec. 24, 1985), and now available from Personalized Software for the Portable Plus and HP150.

—Customized on 3½" disk by special arrangement with Simon & Schuster, Inc.

PC Magazine rated eight leading spelling checkers for ease of use, flexibility, speed, overall program size, thoroughness, and accuracy. WEBSTER'S NEW WORLD SPELLING CHECKER came out on top—for a number of good reasons:

First, there's sheer size. WEBSTER'S contains over 110,000 words in its dictionary—five times the number in Hayden's Speller, 2½ times as many as in The Word Plus—yet WEBSTER'S dictionary and main program take up only 207K of disk memory.

Second, WEBSTER'S isn't just easy to use—it's positively a *pleasure*. It reads your files at high speed, then displays every questionable word *in context*, highlighted. At the same time, in a "window" off to the side, it gives you a list of possible correct spellings. A simple menu gives you the following options:

- Accept the word as is
- Replace the word with one of the suggested spellings
- Enter the correct spelling manually

RECOMMENDED FOR:

HP110 Portable	Portable Vectra	●
Portable Plus	HP150	●
IBM PC and compatibles		●
Available on ROM Backup for the Portable Plus		

- Add the word to an auxiliary dictionary of frequently used words
- Replace all other occurrences of the word
- Look up the spelling of any other word at any time

WEBSTER'S also lets you mark in your text any spelling corrections that change length of a word; this lets you quickly locate portions of text that may need reformatting.

WEBSTER'S will automatically locate double repetitions (like "and and"). It can correct transpositions ("itme" becomes "item"), missing apostrophes ("dont" becomes "don't"), and *typos* of all kinds ("spelling" becomes "spelling," etc.).

If you're not sure of a word, you can even *spell it the way sounds*, and chances are WEBSTER'S will supply the correct spelling. ("Phenomenon" gets corrected to "phenomenon," for example.)

In addition, WEBSTER'S will let you preview a list of all questionable words *before* displaying them in context; this saves you time because it lets you eliminate words from the questionable list (or add them to your auxiliary dictionary) before you begin the editing pass.

John Dvorak, writing in the *San Francisco Examiner*, called WEBSTER'S "the

best spell-checker we've seen in a long spell." Henry Kisor of the *Chicago Sun Times* has called WEBSTER'S "the best proofreading software on the market." We agree with them both—and we think you will too. Order your copy at no risk today.

Webster's Spelling Checker on 3½" disk customized for the Portable Plus and HP150 \$79.95
\$69.95 for Portable Paper subscribers.

PRODUCT NO. WB11NS

Webster's is available on ROM backup for an additional \$179. See ROM ad in this issue for important details.



WEBSTER'S SPELLING CHECKER works with any file produced by the Editor, WordStar, and MemoMaker. It also works with ASCII files produced by MS Word and Word Perfect.

Our version of WEBSTER'S includes a customized 3.5" disk and simple instructions for running the program on the Portable Plus and HP150. A special utility allowing WEBSTER'S to run on the HP150 is included on the disk.

60-DAY MONEY BACK GUARANTEE

See order form for details.

TO ORDER

Use enclosed postage-paid order form or send check or credit card information

(#, exp. date, signature) to:

Personalized Software

P.O. Box 869, Fairfield, IA 52556 515/472-6330

Attention HP110 Users:

Order WordPlus for your

Spell-checking needs!

HP Portable users:
Sorry, WEBSTER'S won't run on the 110;
your best bet is THE WORD PLUS, another
top-rated spelling checker available from
Personalized Software.

© Copyright 1987 Personalized Software

PV PV users: Please subtract \$10 from subscriber price (since we don't have to send you additional customized disks or extra documentation). Be sure to indicate "PORTABLE VECTRA" on your order.

PUBLISHER'S MESSAGE



Hal Goldstein

As you have no doubt noticed, *The Portable Paper* has changed its color. We got a reprieve last issue when our printer mistakenly printed it on the original ivory stock, despite my instructions and my Publisher's Message last issue. The problem, as I mentioned last time, is that with no new HP Portables being produced, new *Portable Paper* subscribers are harder to come by. HP Portable owners have remained most loyal -- we have about 1200 paid subscribers. However, to continue to be strong as a company, we must reduce costs where we can without effecting overall quality. The paper change will halve the cost of producing *The Portable Paper* without affecting its contents.

This issue fulfills several requests made by Portable Plus owners. First of all, we review TaxPad -- a series of Lotus

FOR HANDY REFERENCE: Items *directly* relevant to the three HP Portables are denoted in this issue as follows:

110 110 Portable **P+** Portable Plus **PV** Portable Vectra **LS/12** Vectra LS/12

When items are *partly* or *indirectly* relevant they are denoted as:

110 110 Portable **P+** Portable Plus **PV** Portable Vectra **LS/12** Vectra LS/12

templates designed to simplify doing your 1989 taxes. (Other HP Portable Lotus users should also be able to make use of this product). Secondly, Portable Plus WordPerfect users will now be able to preview printouts on their Portable Plus in graphics mode. Finally, thanks mostly to Ed Keefe, chess and 9 other games have become available for the Portable Plus.

In this issue you'll also find some information about HP -- the way HP quality tests its equipment and how HP continues to maintain its no-layoff policy despite demanding economic times. (Other large computer companies such as IBM and Apple have been forced to layoff a number of people). Vectra users will find out that DOS 4.01 probably means better performance. Finally, many of the hidden keyboard combinations of the HP110 and Portable Plus are revealed and summarized.

Hal Goldstein

LETTERS

Lotus 123, Release 3

PV I just got my 123 upgrade for my Portable Vectra and when I try to run install, I get the following answer: "Lotus 123 Release 3 is only able to run on a 80286 or 80386 processor." What shall I do?

**Jose Bromberg,
MEXICO D.F.**

[We were incorrect last issue when we said we thought version 3 would work on the Portable Vectra. Lotus 123 Release 3 will not work on the Portable Vectra (or any 8086 type machine). Lotus will trade your version 3.0 for 2.2 when you explain the difficulty.]

Another possibility power spreadsheet users should consider is Borland's top-rated Quattro Pro, which is available through Personalized Software or your local dealer. A number of independent reviewers have rated it superior to Lotus 3.0, and it will run on the Portable Vectra and LS/12 -- Hal.]

More on 128K EPROMs

There were some rumors in the recent *Portable Paper* about the use of 1MB EPROMs (128K) for storing Software on the B: drive of our Portable Plus ma-

chines, but no further indications about the progress of that project.

I'm glad to inform the Portable Plus user community that a friend of mine succeeded at last in finding a solution. He is able to burn 128K in one 1MB ROM-compatible EPROM and install it with the help of a handmade adapter socket into the software-drawer of the Portable Plus. This adapter socket is necessary, because of the 32-pin package of these EPROMs with respect to the 28 pin ones of the ROMs. A subdirectory entry on the B drive allows up to two of these chips giving a total of 256K of software by consuming only two precious sockets in the drawer. The drawer accepts these chips with the adapter sockets only in four or six positions without modification, other positions require a small modification of the drawer (removal of A/B jumpers). I can't estimate costs yet because the required EPROM-chips are difficult to obtain.

For anybody who is interested in obtaining further information about these new possibilities, send me a letter (Achim Baehr, Arget Holzkirchener StraBe 20a, D-8029 Sauerlach, West Germany) preferably with an IRC, or a FAX (No. 49-89-485762, indicate "Umweltinstitut", because I share that service).

I am looking for a solution to another problem: Is it possible to obtain the

source-code of the FORMIB-Program obtained on the 1988 subscriber's disk in order to modify it to format 3.5 inch diskettes correctly in the standard MS-DOS format (730,112 bytes instead of 728,064)? Or does one of your technical experts know a solution on how format diskettes with the Portable Plus and HP-9114?

I would like to modify the 9114 disk drive in order to accept 2 drive units, and/or to use a 1.44MB drive instead of the present 720K drive. Where could one obtain detailed technical information on the controller and the firmware of the HP9114? Are there technical reference manuals available, which tell these details? HP Germany is unable to tell.

**Achim Baehr,
WEST GERMANY**

[I'm glad to hear about the success in creating 128K EPROMs. As outlined in previous Portable Papers, the idea is to create a 32 pin to 28 pin adapter so commercially available 32 pin EPROMs can be used with the 28 pin sockets found in the HP ROM drawers. We have had a frustrating experience with our contractor who has not been able to deliver these adapters to us. The adapters need to be manufactured, as it is tedious work to build them by hand. If anyone can manufacture these for us

at reasonable cost, please call me.

I have contacted the author of FORMIBM. He said he would send me the source code, but I haven't received it yet.

As far as I know, there is no good technical information available on the HP9114 disk drive - Hal.]

Experience with Squish Plus

P+
PV
LS/12

My last order from you arrived safely and without any complications in Sana'a, Yemen Arab Republic. However, I experienced that typical space savings obtained with Squish varied between 28 and 32% - and not 50% as advertised. Still, with a chosen Squish drive size of 640K I was saving 200K.

Klaus Jacobi
YEMEN ARAB REPUBLIC

[The amount of disk space Squish Plus can save varies according to the type of files (Lotus, text, executable, soft fonts, data base), the contents of those files, and the type of disk it is running on. For example, I keep soft fonts and batch files on my Portable Vectra Squish disk located on its hard disk. I save over 100% of file space - what would normally take 2.1MB of storage takes 1MB of storage.

On the other hand, if you try to save .COM or .EXE files on the Portable Plus, you may save only 10%.

In general, the space savings for the same type of file is not as great on the Portable Plus as on the hard drive of the Portable Vectra or LS/12. The Portable Plus cluster size is 512 bytes while the Portable Vectra and LS/12 hard disk cluster size is 2048 bytes. That means the Portable Plus is already more efficient at storing files than the Portable Vectra, so Squish Plus is not quite as effective on the Plus. (The smaller the cluster size, the slower the disk access. A slower disk access speed doesn't matter much on the Plus, because it's accessing an electronic RAM drive. The Portable Vectra and LS/12 have a standard hard drive and access time is a significant issue.)

The fact that we have not received returns on Squish Plus, shows that HP Portable users have found the product worth while in increasing file space - Hal.]

Wants More Software for the HP150

P+

Having read (yet again) another issue proclaiming all the wonderful software programs that are available for the HP150 and Portable Plus, I have yet to see any-

thing really practical, such as income tax programs, legal documents that can be done without a lawyer, simplified graphics (Chart Gallery is a horror), ad infinitum. Even your Editor II doesn't allow text columns.

My office has an IBM compatible and an HP150. I have a 150 and a Portable Plus at home. We've got such neat software at the office. I sure would love to be able to use it at home. It's no wonder no one wants HP stuff.

Or is there perhaps a way to make it work. I know about AdvanceLink, but I don't know how to use it. It's such a big bother anyway, having to tote computers all over the place.

Audrey Germain
Sacramento, California

[See this issue's review about TAXPAD, a series of Lotus templates for doing your taxes. If you use WordPerfect for the HP150 or Portable Plus, there is a product called OverDrive (from TurboSoft in Cleveland, phone #: 800-284-7600) containing many legal documents. There is shareware available in ASCII format (readable by any word processor) that consist of legal documents.

Obviously, there are a much greater variety of products available for the IBM world than the HP150, HP110, and Portable Plus world. However, the fact that so many people still use the HP150 and HP Portables speaks for the quality of engineering of these machines, and the fact that there are many useful products available - Hal.]

Scientific Word Processor, FastPlus and DOS 3.0

P+
PV
LS/12

I strongly support the need for a scientific word processor to be used on the Portable Plus (see Vol.4, No.6, Pg.5). I think that the CHIWRITER would be an excellent choice for many reasons. Not only is it cheap and small, CHIWRITER is almost a kind of a standard at the universities and scientific institutions in Yugoslavia. It could be used also for all other custom purposes.

It's simple and easy to use (you can start using it the same moment you get it) and yet can produce some very sophisticated results. And once learned, you won't forget how to use it, no matter how long it sits unused. I would really like to have it on my Portable Plus.

Is the new, faster NEC V30 processor [used for the FastPlus upgrade that speeds up the Portable Plus - Hal] organized as all "standard" processors, having the small BIOS program, and using the separate COMMAND.COM program and DOS utilities? Is it, in that case, possible

THE PORTABLE PAPER Volume five/Number two March/April 1990

Editor/Publisher
Hal Goldstein

Managing Editor
Richard Hall

Department Editors
Tom Page
David Hughes

Contributing Editors
Craig Fullman
J.D. Flemming Jr.
Bill Hayle

Copy Editor
Glen Frank

Art Consultant
George Foster

Circulation
Vicki Randolph
Barbara Gianino
Deb Quade

Executive Advisor
Rita Goldstein

The Portable Paper (ISSN-0886-9138) is published bimonthly by Personalized Software at 57 East Broadway Avenue, Fairfield, IA 52556. Subscription rates, one year: U.S. and U.S. possessions, \$55; Canada, Mexico add \$3 surface mail, \$6 air; other countries add \$6 surface mail, \$18 air. Please allow four to six weeks for receipt of first issue. Executive, Editorial, Circulation, and Advertising Offices: P.O. Box 869, Fairfield, IA 52556. Telephone: (515)472-6330, FAX: (515)472-1879. (c) Copyright 1988, Personalized Software, all rights reserved. No part of this publication may be reproduced without written permission. Reasonable efforts are made to provide accurate and useful information, but the reader must make his or her own investigations and decisions; the Publisher and Editorial Staff cannot assume any responsibility or liability for the use of information contained herein.

POSTMASTER: Please send address changes to Personalized Software, The Portable Paper, P.O. Box 869, Fairfield, IA 52556.

to increase the DOS version to the level 3.0 or higher? I am not any kind of processor specialist, and if my question is foolish, just forget it. (I already got the answer that *The Portable Paper* is unable

to increase the DOS level on Portable Plus, but maybe somebody else can?)

Prof. Dr. George Paunovic
Belgrade, YUGOSLAVIA

PPTJ and MemoMaker Questions

P+ I really like the PPTJ program for configuring the ThinkJet. I tried using the MEMO-MAKR.BAT file, but I have one problem with it. After entering MemoMaker through the .BAT file, the **Get Memo** key prompts for retrieving files from the B drive. Of course, I don't have any files saved on the B drive, and would prefer the A drive prompt. Is there any way out of this? I realize I can backspace over the B drive prompt and replace it with the letter A, but it would be nice if the A prompt appeared.

Also, is there any way to adjust the top and bottom margins on the MemoMaker printed page? I'd like to do this for two reasons: First, if I use **8 lines/in** on PPTJ, it doesn't help much on MemoMaker because it will only print out 55 lines. The result is a short printed page. Second, I like to set the top of the page on the ThinkJet so that the perforation is just above the pinch rollers. This saves a sheet of paper each time because the **end-of-page** signal feeds the paper each time so that I can tear it off without a form feed. However, MemoMaker has built-in top and bottom margins, and using my technique, the printed page is shifted down. Any easy solutions?

I think *The Portable Paper* is great, and I've put to good use many of your programs and ideas. Keep it up. Many of us have thousands of dollars invested in the HP portables, and will keep them for years.

Randall Black
Cape Girardeau, Missouri

[The PPTJ program, on the 1990 Subscribers Disk, lets you configure your ThinkJet from within MemoMaker, The Editor, Lotus, or wherever.

I know I had a good reason for over-complicating the batch file included on the 1990 Subscribers Disk, but I don't remember what it was. To rectify the problem you described, create a batch file named, say, MMK.BAT containing the following two lines:

pptj
memomakr

Then add the following two lines to your PAM.MNU file:

MemoMaker
mmk

I don't know of solutions to the other problems you raised except to suggest you

try our Editor II program. If anyone has solutions, please write us -- Hal.]

Questions on the 1990 Subscribers Disk

P+ The documentation for the *1990 Portable Paper Subscribers Disk* says that PPTJ can be used with any program. I need specific information on how to use it with The Editor II, MemoMaker, MS-Word, and Basic. In addition I need help in running PPTJ with MemoMaker when Run by MM (Destructive Backspace Program). It seems to me that when I try to go to another program the printer just loses its setting. What are the settings in the System Configuration?

When I try to run NYET from DOS, it just locks the cursor in the upper left hand corner of the screen. When I try to run NYET from DOS, it only displays a blank screen with the cursor that I can move anywhere on the screen. The only way out of either of these situations is to key **Shift, Ctrl, Break/Stop**. What should I do?

I had a terrible time printing out a decent copy of the LHARC Manual. I must have used up darned near 100 sheets of paper to get it done. When I first started, I realized that I probably would have to load the LHARC.DOC and save it to a disk as LHARC.A (ASCII).

Using the ThinkJet printer, I had to print out one copy at six lines per inch and one at eight lines per inch. Then, to top it all off, I re-typed to the keyboard pages 2, 4, and 5, and then printed them out at six lines per inch. This did make a readable document, even though it is not really homogenous, or of consistent density. If you want, I can send you a copy of pages 2, 4, and 5 on a disk.

The EVAL program seems to be a nice start on what could become a really useful little math program, but it has one glaring deficiency -- it needs the ARCSIN, ARCOSINE, and ARCTAN functions (i.e. the means to convert decimal values back to an angle). Also, POLAR-TO-RECTANGULAR and RECTANGULAR-TO-POLAR conversions would be nice.

Cliff Looyenga's HP-IL ROUTINES come on an earlier disk, and I have absolutely no idea how to use them. There were no instructions, no documentation that I could discern on the disk, and none in the envelope. I don't know if I need PASCAL to run them or what!

Gerald S. Watry
Bloomington, Minnesota

[In general, use the strategy described in the last letter for installing PPTJ (into the Portable Plus only). For any program that you want PPTJ to install automati-

*cally, you must create a two line batch file. The first line consists of **PPTJ**. The second line contains the command used to start the program.*

To find out the way DOS starts the program, you must, within DOS, look for the PAM.MNU on the A drive or in the B drive subdirectories. Using the DOS TYPE command or reading PAM.MNU files into your word processor will reveal the command for calling your various application programs.

Once you have created the batch file, add two lines to the PAM.MNU file on the A drive in the same manner described in the last letter.

The letter that accompanies the Subscriber Disk contains a listing of which programs run on which HP Portable computer. You'll see that NYET works only with IBM compatible computers, not the HP110 or Portable Plus.

Sorry for the difficulty you had with LHARC ... that was the documentation that came with the program and we did not touch it. The HP-IL routines are self-documenting and for PASCAL programmers. They were provided as is.

I think readers would be amazed at all the time and effort it takes to put together a subscribers disk, imperfect as they are. We want to make all the programs usable. However, when given the choice as to whether to include a program or not, we'll often err in favor of including a program even if only some users can make use of it -- Hal.]

123 Questions

110 P+ You kindly say "do write to us - we will try and solve your problems." I have an HP110 - disk drive and Thinkjet printer. I have three problems:

1. I have set up a database file on Lotus 123 for names and addresses, and have got them sorted in alphabetical order. I am enclosing an example of how they print out. What I need to do now is have the format so arranged that the addresses will print out on to self adhesive labels. How do I go about this - as you see, at the moment the addresses are printing on two different pages. Can you help? I have searched through the manual and also cannot find any help on the video tapes for this.
2. In the Lotus 123 manual it says that F1 function key is the HELP key - but it does not seem to work on my HP110 - what should one do?

(Continued on page 43.)

110%

Making More of Your HP Portable

by Hal Goldstein

Do Your 1989 Taxes Your HP Portable

J.D. Fleming, Jr.

110 TAXPAD is a set of Lotus 123 templates designed to simplify the work involved in producing an individual tax return. Since it will run under 123, 1A (and 2.01), it can be used on the HP portables.

P+ TAXPAD's principal advantage is that it will be instantly familiar to anyone who is comfortable with Lotus. There is no learning curve since the spreadsheet duplicates the 1040 forms and the common supporting schedules and forms. This approach also allows the user to modify TAXPAD easily to interface with Lotus schedules which are designed to meet special needs, such as forms which TAXPAD does not provide.

PV The principal limitation of TAXPAD is that it is a computational aid, not a tax advisor. Unlike the better known desktop programs, such as TaxCut and TurboTax, TAXPAD provides only minimal guidance and it does not offer any online help. You will need whatever instructions and books you would use to prepare your return manually. (Brief reviews of four popular tax programs appear in PC Magazine, the February 27 issue, in the After Hours section; additional programs will be reviewed in the next issue. As far as I know, none of these will run on the Portable Plus or the 110.)

LS/12 TAXPAD will produce IRS-approved "Computer Generated Tax Forms and Schedules" for all IRS Forms and Schedules except the signature tax forms themselves (Forms 1040, 1040A, or 1040EZ). In the case of the 1040s, the spreadsheet printer output produces a concise hard copy of your complete tax situation to facilitate easy manual transfer to IRS forms. (TaxCut and TurboTax do generate approved 1040 forms.)

SCHEDULES AND FORMS PRODUCED

TAXPAD includes the following schedules and forms:

Form	Description
A	Itemized deductions
B	Interest and dividend income
C	Profit or loss from business
D	Capital gains and losses
E	Supplemental income from partnerships, etc.
F	Farm income and expenses
R	Credit for the elderly and disabled
SE	Social security self employment tax
2106	Employee business expenses

2119	Sale, exchange of residence
2441	Credit for child care
3903	Moving expense adjustment
4562	Depreciation and amortization
6251	Alternative minimum tax
8606	IRA computations
8615	Children below 14 with income more than \$1000.

About 10 worksheets are also provided for calculating entries for the 1040.

USING THE PROGRAM

TAXPAD may be ordered either on 3.5" or 5.25" diskettes. The spreadsheets can be loaded from the 3.5" disk into the Portable Plus from a 9114 drive.

The first step in using the program is to produce a working copy. This is done through macros which execute automatically when the source file is loaded. They copy one or two form files to generate either the full TAXPAD sheet or a smaller version for systems with limited memory. [CAUTION: The macros erase files which are no longer needed once the operating file is formed. If you want to preserve your disc so you can produce either the large or small worksheet, set the disc read/write slide to protect before you begin the installation procedure. This will abort the macro after the main worksheet is generated, but before any files are erased.]

Applications Engineering recommends 384k to run the full TAXPAD spreadsheet, but about 220k will be enough on the HP portables since Lotus executes from ROM. The smaller version will run in about 190k. The difference is that the large version offers two separate copies of schedules C and SE to simplify returns of two spouses who are self-employed, while the smaller version only contains one. The smaller version also has Form 4562 (depreciation and amortization) in a separate file while 4562 is contained within the main sheet in the larger version. Even with the smaller version, you will probably have to load TAXPAD from a disc if you use a 110. In past years, I have trimmed TAXPAD on a desktop to eliminate surplus forms and schedules and reduce the spreadsheet to a size which can be stored on a 110, but this takes a bit of patience.

The master worksheet is named TP.WKS. If several returns are to be prepared, the easiest way is to begin by copying TP.WKS to the taxpayer's name, e.g. SMITH.WKS. Once the sheet is loaded, the preparation of the return begins with a worksheet for basic data input, including names, social security numbers, and W2 income amounts. The form allows separate entries for two

New software breakthrough!

50% more file space for as little as \$89.95!

- **Easy to use**—if you can save a file, you already know how to use **SQUISH PLUS**!
- **A must for every HP Portable owner—ROM Backup version especially valuable if you use a Portable Plus!** (Sorry, **SQUISH PLUS** doesn't run on the HP110.)

It isn't often we find a program that's a must for every portable user, but Squish Plus is just such a program.

Squish Plus lets you increase your disk storage space by 50% or more for as little as \$89.95—without having to install any hardware or learn any new commands.

Squish Plus compresses files, saving them much more efficiently than DOS. For example, a word processing file of 50K might only take 30K using Squish Plus.

COULDN'T BE EASIER!

To use Squish Plus, you simply add a new drive letter to your system (for example, e:). If you wish, the new "drive" can be password protected.

Then, whenever you save files to the new "drive," Squish Plus compresses them automatically. When you retrieve a compressed file, Squish Plus automatically expands it to its normal size.

The saving in disk space is enormous: Squish Plus compresses data files (spreadsheets, text documents, databases) by 30-70%, and compresses program files by 5-25%. On the average, *you will increase the amount of data you can store on a disk by 50% or more!*

Note: All your other software can use the compressed data *as is*. There are no new commands to learn. You set up directories and perform all file operations—save, retrieve, copy, rename, backup, etc.—the same way you always do. (File backup takes up fewer disks, of course, and is significantly faster.) You can even use the Norton Utilities "Undelete" program to re-

cover compressed files that have been deleted!

Initial set up is easy too. There is no need to reformat or repartition your present disk. All you do is install Squish Plus as a "device driver." (You don't even have to know what that means. The manual—one of the best we've seen—walks you through the procedure in 5 minutes.)

ANY DRAWBACKS?

Other file compression programs impose a speed penalty. But Squish Plus is so efficient *there's virtually no loss of speed*—especially on the Portable Plus—except perhaps for a slight additional wait with some of your program files and largest data files.

Other file compression programs also set aside a significant amount of internal memory space for file decompression. But Squish Plus uses only 36K of memory for everything.

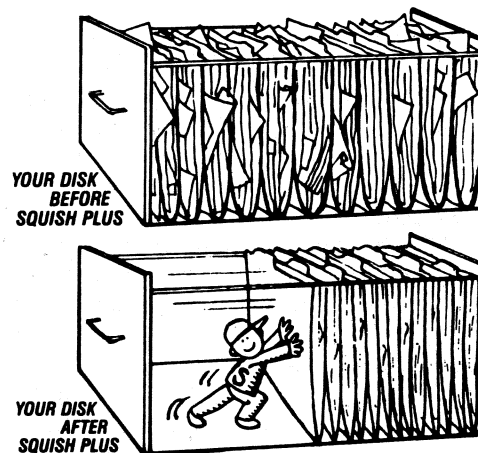
(Portable Plus users may need to increase internal [main] memory by as much as 36K. On the Portable Vectra and LS/12 Laptop, Squish Plus simply borrows 36K from the 640K of memory that's built in.)

WHAT ABOUT DISK SPACE FOR THE PROGRAM ITSELF?

The files on the Squish Plus disk total 139K, including several Squish Plus utilities.

Portable Plus users can get by with just 54K by eliminating all but two essential Squish Plus program files. (You can even reduce your Edisk space requirement to zero if you're willing to disable PAM and load Squish Plus from an HP9114 each

RECOMMENDED FOR:	
HP110 Portable	
Portable Plus	●
Portable Vectra	●
HP150	●
IBM PC and compat.	●
Available on ROM Backup for the Portable Plus	



SQUISH PLUS "compresses" your files so they take up less disk space!

time you reboot).

A better alternative—and the one we recommend—is to purchase Squish Plus on ROM Backup (see box below).

Whatever computer you use, *there is no other way to expand your file storage space that is as easy or economical as Squish Plus*. Order your copy at no risk today.

	Retail Price	Subscriber Price
Squish Plus for IBM PC compatibles	\$99.95	\$89.95
PRODUCT NO. SQ12NS		
Squish Plus for Portable Plus	\$129.00	\$99.95
PRODUCT NO. SQ11NS		
Rom Backup Package (includes Squish Plus for Portable Plus on disk and two 64K Backup ROMs)	\$264.00	\$234.95
PRODUCT NO. SQ11NK		
Squish ROMs (Must own Squish Plus for Portable Plus for each ROM set purchased)	\$135.00	\$135.00
PRODUCT NO. SQ12NR		

60-DAY MONEY BACK GUARANTEE

See order form for det. ils.

TO ORDER

Use enclosed postage-paid order form or send check or credit card information (#, exp. date, signature) to:

Personalized Software

P.O. Box 869, Fairfield, IA 52556 515/472-6330

IMPORTANT MESSAGE FOR PORTABLE PLUS USERS

Special Portable Plus version

The authors of Squish Plus have worked with Personalized Software to create a customized version that runs on the Portable Plus. *This version is available only from us.* Be sure you specify "PORTABLE PLUS VERSION" when you order.

Buy Squish Plus on ROM!

With disk space at a premium in the Portable Plus, the best way to buy Squish Plus is on ROM Backup.

Our exclusive ROM Backup package includes the Squish Plus disk, and two ROMs—128K total—that contain all the Squish Plus files (except for one that you'll never need).

With Squish Plus on ROM, all the useful Squish Plus utilities will always be available, and you won't have to give up any disk space at all.

CALL NOW!

515-472-6330

spouses and two state or local taxing authorities. A macro (N) copies the names and social security numbers to all supporting forms except SE, which uses a different name entry system.

A calculator window appears at the bottom of the screen. This is simply a Lotus cell in which the usual chain additions, multiplications, and so on can be carried out. A macro (C) permits numbers to be pasted from the calculator cell to a data entry cell in the main window. The calculator window also shows the last recalculation of the bottom line tax owed or overpaid. The worksheet is set for manual recalculation in order to avoid the long delays that would otherwise accompany each input operation. Recalculation (shift f1) is necessary to update the result.

Once the basic input data have been entered, the user moves to completing the necessary supporting forms. Menus of the forms and schedules can be called up at any time through a macro (M), and the forms can also be located quickly with a Goto (f5) command, followed by a Name command (f3). That displays all of the range names and the desired form can be located easily. The TAXPAD manual contains brief descriptions of the entry steps which are required and warnings about common problems.

Cells which commonly require input by the user are unprotected and most cells with formulas are protected. There are a few exceptions, however, so the user should always look at the cell contents on the top row of the screen before entering a new value. If a formula appears, be sure it is not needed before overwriting it.

PRINTING

Printing is carried out from a menu. Selections include printing all forms, schedules, and worksheets; printing individual items; and printing a group of selected items. The user must configure the printer using the normal Lotus settings for margins, page length, and set-up strings.

Other spreadsheets can be combined with TAXPAD to make the job of preparing a tax return fairly easy. For example, I use a Lotus spreadsheet to tally and print checks, somewhat like a rudimentary Quicken, and to break down American Express and Visa charges. The charges can be sorted by category at the end of the year, summed, and transferred to the TAXPAD sheet by combining the check file with TAXPAD and editing the TAXPAD cells to pick up the subtotals.

CONCLUSIONS

TAXPAD is a thoughtfully designed system which does exactly what it was intended to do. It does not represent the ultimate in bells and whistles, but it offers flexibility, simplicity, and portability not available with other systems. If you still prefer the HP portables and like Lotus, you will probably be happy with TAXPAD. If you are satisfied with a desktop or one of the two hour battery portables and don't need a program you can modify, you will probably be happier with TurboTax or TaxCut.

TAXPAD should run on the HP110, however, you may have to run it off the 9114 disk drive. TAXPAD comes on a 5.25" and 3.5" disk. The 3.5" disk does not come in HP format.

ORDERING INFORMATION

TAXPAD '89 was developed by Application Engineering, P.O. Box 1418, Lawrence, KS 66044, phone: 913-843-3170, and retails for \$59.95. The 1990 Revision/Upgrade, for existing users, will be \$49.95.

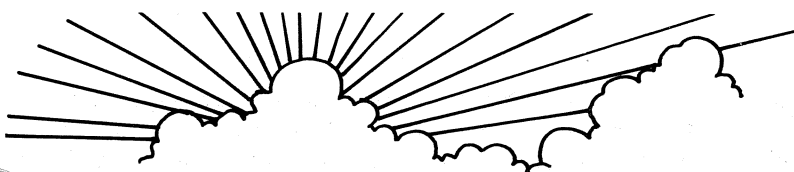
SUBSCRIBERS CAN SPECIAL ORDER TAXPAD '89 through Personalized Software for \$54.95. Please call us at 515-472-6330, or FAX us at 515-472-1879.

[J.D. Fleming is a partner in an Atlanta/Washington D.C. law firm and often uses HP portables in his work as a litigator.] ■

Hidden, Important HP110 and Portable Plus Keys

110 There are a number of useful things you can do with the HP110 and Portable Plus keyboard that are not obvious. **P+** We have discussed many of these in past issues of *The Portable Paper*, but here is an attempt to pull all of them together. In this issue we will discuss some of the most unique keyboard combinations. In next issue we'll look at CTRL and Extend char combinations. If we forget keyboard features, write in an we'll publish your contributions.

- Perform Diagnostics Test. Turn system off (press **f8** from PAM), hold down the **CTRL Shift** and **Extend char** keys and hold down **f8** for a few seconds and let go.
- Perform a "soft" reboot. Hold down the **CTRL** and **Shift** keys and press the **Break Stop** key. This is equivalent to the **CTRL ALT DEL** reboot on a PC compatible.
- Perform a "hard" reboot. Hold down the **contrast** key (to the right of the right **Shift** key) for 15 seconds (8 seconds on the 110 we tested). This is equivalent of turning a PC compatible **off** and **on**.
- Reboot from the ROM (B drive). Turn the system off by holding down the **contrast** key for 15 seconds. When the system is off hold down the **CTRL Shift** and **Extend char** keys and then press the **contrast** key. Use this if you ever get a "Bad or missing command interpreter" message or for one reason or another you cannot reboot your system. This situation is usually caused from incorrectly modifying the CONFIG.SYS file. Be sure to fix CONFIG.SYS as soon as you reboot.
- Adjust the contrast. Hold down the **contrast** key or the **Shift** and **contrast** keys. (Also move the screen up and back).
- Turn computer on. When computer is off hold down **any key** (except the **Shift**, **CTRL**, or **Extend char**) for a second or tap the **contrast** key.



The Editor II It's way beyond MemoMaker!

You won't believe all the word-processing features this \$129* program contains—and it takes up less than 40K of memory!

* (only \$99.95 for Portable Paper subscribers)

By Hal Goldstein

Let's face it: MemoMaker is an adequate word-processor, but it has its limits. No search and replace. No simple way to merge files. No destructive backspace key. (To delete the last character you have to use the left arrow key and the deletion key[s].) No compressed or expanded printing. No...—but why go on? If you use MemoMaker, you probably have your own list of things you wish it could do.

Well we have good news! Now there's an easy-to-use text editor that runs on the Portable and Portable Plus that will satisfy almost every item on your wish list. And the program comes with a built-in bonus: It also runs on the HP 150, IBM PC, and HP Vectra, which means that **now you can use the same program and files on your desktop that you use on your Portable.**

The program is called THE EDITOR II. It does everything MemoMaker does plus a heck of a lot more. And you don't have to go to the expense of buying WordStar (for the Portable) or MS Word (for the Plus) to go beyond MemoMaker's capabilities.

THE EDITOR II's most valuable features are listed on the chart to the right. It's quite a list, isn't it? To me, THE EDITOR II is a real blessing. I use it daily instead of MemoMaker, and I've silently given thanks to its author, Ed Gilbert, many, many times. Just a few minutes with THE EDITOR II (that's all it takes to be up and running) and I think you'll be a fan of his too.

In addition to the great features listed to the right, there are six more I especially want to emphasize:

1. THE EDITOR II's Lotus-like menus make it incredibly easy to use.
2. THE EDITOR II creates ASCII files, which means you can send your files to and from almost any other program or computer without special formats or codes.
3. THE EDITOR II will automatically back up your files to protect you against mistakes: When you save a file, THE EDITOR II saves not just the current version, but the previous one as well.

NEW VERSION!
Now has line and block centering, powerful macros, and new printed tutorial!
Easy to upgrade from Version I.

4. THE EDITOR II takes up less than 40K of memory.

5. THE EDITOR II loads and saves files and executes commands exceptionally fast.

6. THE EDITOR II comes with a well-written reference manual and a step-by-step tutorial.

Even in the desktop market, **it is difficult to find a word processor with this many useful features at this low a price.** For the Portables, THE EDITOR II simply can't be beat. See for yourself: Order your copy, risk-free, today.

THE EDITOR II on disk \$129.00
Portable Paper subscriber price . . . \$99.95
PRODUCT NO. EDI1NS

ROM BACKUP version \$194.95
(THE EDITOR II on ROM and disks)
PRODUCT NO. EDI2PP

For users of Version I or SuperROM:

EDITOR II Upgrade Kit on disk . . . \$35.00
PRODUCT NO. EDI4NS

Upgrade Kit on ROM and disk . . . \$58.00
PRODUCT NO. EDI5NR

RECOMMENDED FOR:	
HP110 Portable	•
Portable Plus	•
Portable Vectra	•
HP150	•
IBM PC and compat.	•
Available on ROM Backup for the Portable Plus	

PV PV users: Be sure to indicate "PORTABLE VECTRA" on your order so we can send you proper disk format.

60-DAY MONEY BACK GUARANTEE

See order form for details.

TO ORDER

Use enclosed postage-paid order form or send check or credit card information (≠ exp. date, signature) to:

Personalized Software
P.O. Box 569, Fairfield, IA 52556 515 472-6330

Special combined offer—

SAVE \$30:

THE EDITOR and THE FORMATTER together—
Only \$119.95 total (Portable Paper subscribers only)

Note: The user manual itself is a challenge, and no technical support is available. We therefore recommend THE FORMATTER for strong computer users or those already familiar with text formatters.

If you need any of the features listed above, and if you're willing to spend the time it takes to learn the commands, THE FORMATTER is for you. Order your copy, risk-free today.

THE FORMATTER \$59.95
Portable Paper Subscriber price \$49.95

THE EDITOR II gives you all these great text-editing features and more:

- **Search and replace.**
Just tell THE EDITOR II what word or phrase to look for, and it will display each occurrence and/or replace the occurrences either selectively or globally.
 - **Edit two files at once.**
THE EDITOR II will display two separate portions of text at the same time, one above the other. You can view and edit two parts of the same file—or even two different files—simultaneously.
 - **Backspace delete.**
You can erase the last character with a single keystroke.
 - **Block and line centering.**
THE EDITOR II lets you center blocks and lines of text with a few simple keystrokes.
 - **Powerful macros.**
Store any sequence of keystrokes and play it back at the touch of a single key. Macros can be edited, deleted, stored in files—even autoloading on startup. THE EDITOR II comes with over two dozen macros to get you started.
 - **No limit on file size.**
If you're an HP110 Portable user, you're no longer confined by MemoMaker's 819-line limit. You can have as large a file as internal memory allows.
 - **File merge.**
You can merge two or more files together with ease.
 - **Compressed and expanded.**
You can imbed control characters in your text to tell your printer to print all or part of your text compressed, expanded, bold, underlined, or whatever else your printer can handle.
 - **Unlimited line length.**
Your files are no longer limited to 80 characters per line. This means, for example, you can print 132-character lines on your ThinkJet in compressed mode.
 - **Lines per page.**
You can specify the number of lines per page, using the control codes required by your printer.
 - **Easy in, easy out.**
You can exit from THE EDITOR II, run another program, then type a one-word command and be back in THE EDITOR II exactly where you left off. This includes exiting DOS—which means you can delete, copy, and rename files while running THE EDITOR II.
 - **Right justification and automatic paragraph indent.**
A simple command right-justifies your text and automatically indents your paragraphs however many spaces you wish.
 - **Undelete.**
A simple command will undelete the last line or block of text deleted.
 - **Upper/lower case conversion.**
Another simple command lets you change between upper case and lower case without having to retype anything.
- In terms of useful features per dollar, THE EDITOR II is a truly exceptional buy. I urge you to try it. Order yours today.

Hal Goldstein

The Formatter

THE FORMATTER gives you advanced formatting capabilities that even THE EDITOR II can't handle—like: multi-line headers and footers • automatic hyphenation (you can even add your own words to the built-in dictionary) • user-specified page length and line length • automatic page numbering • tables and charts • table of contents generation • and more.

THE FORMATTER works by imbedding special formatting codes into your EDITOR II, MemoMaker, or other ASCII text files. You can customize THE FORMATTER for almost any printer.

PV PV users: Be sure to indicate "PORTABLE VECTRA" on your order so we can send you the proper disk format

- Get rid of or display function key labels. Press the **Menu** key to toggle on and off the labels that appear at the bottom of PAM, DOS, Reflection, MemoMaker, and HP110 Terminal. Most users are not aware that there are a set of eight function keys that you can use in DOS to edit DOS commands. (In practice only the first three of the DOS functions keys are of much use.) There are times within the HP110 Terminal program that users must press the **Menu** key or they will become lost.
- Edit your last DOS Command. Press **f3** and the entire last DOS command will appear at the prompt. Backspace and type new characters if you wish. Or you can press **f2** and type a letter that appeared in the last DOS command. All characters from the previous DOS command up to that letter will appear at the prompt. If you want one character at a time to appear at the DOS prompt, press **f1** for each character. After using **f1** or **f2**, if you want the remaining letters to be the same as the last DOS command, press **f3**.
- Access function keys 9 and 10. If an IBM PC program is to work on an HP Portable, first enter PAM's **f6 System Config** menu. Change **Console Mode** from **HP** to **Alt**. If the program runs, you'll find the **Menu** key becomes **f9** and the **User System** key becomes **f10**. Programs we distribute such as Webster's Spelling Checker, The Norton Utilities, and WordPerfect 5.0 all make use of these Portable Plus keyboard mappings of **f9** and **f10**.
- Toggle the cursor back and forth between being an underline cursor and being a box cursor. Hold down the **Extend char** key and press **f1**. If you are in **Alt** mode (see previous paragraph), hold down the **CTRL** key and press **Select**. In almost all applications, the box cursor is more readable than the underline cursor. You can permanently set the cursor for box from the **f6** System Config with PAM. ■

Charging Batteries on the Portable Plus

By Bill Hayle

110

P+

There have been problems in the past with the Portable Plus's battery life after several months of usage. The factory has done extensive investigation on the problem and the following article is an in-depth description of the problem and the solution.

DESCRIPTION OF THE PROBLEM

The problem appears to be caused by the FLOAT VOLTAGE applied to the battery after it is already fully charged. The current battery charger (which is a circuit on the Motherboard PCA and NOT the AC Power Adapter!) provides a float voltage of 7.1 volts. This voltage, when applied to the new 45711-60990 battery assemblies for an extended period of time without discharging the battery, can cause the battery to "dry up" and lose its capability to hold a

charge. (The new battery assemblies replaced the old Gates batteries that came with the HP110 and the first Portable Pluses.) For users who leave their unit plugged in all the time and never run the unit off of the battery alone, this can result in a shortened battery life.

The Portable Plus (as does the HP110 Portable and Portable Vectra CS) uses a three-cell Lead-Acid battery. Lead-Acid batteries have certain characteristics that must be remembered when talking about battery charging/discharging:

- They operate best when kept as close to full charge as possible.
- If discharged consistently below 60% charge their life expectancy decreases significantly.
- Only a very few complete discharges (to the Low Battery Indication) can occur before battery is permanently damaged (deep-discharge Condition).
- A constant float voltage can be applied indefinitely in order to maintain a full charge.

The charger in the Portable Plus is a two-stage charger. It produces a 7.5 volt overcharge voltage in order to quickly charge a battery, and also a 7.1 volt float voltage in order to provide a constant float charge. The way these charging voltages are chosen is explained in the HP 45711B Service Manual, Section 5.15.3 Battery Charger. To briefly summarize, a lead-acid battery will draw a larger charging current at a particular charging voltage the more it is discharged. As the battery charge increases, the current that is required to charge the battery at that voltage decreases. When the battery in the Portable Plus is discharged below 80% of its capacity, the charger is incapable of providing a sufficient charging current at the rated battery voltage. When it reaches 80% charge it now can supply sufficient current, and at that point it switches from the 7.5v charging voltage to the 7.1v float voltage. It takes up to 4 hours at this float voltage to bring the battery up to full charge capacity. If the charge indicator (which remember is a SOFTWARE estimate of charge level of the battery) is below 80% when this switch occurs, it will change the indicator to 80%.

HP 110, EARLY PORTABLE PLUS BATTERIES

When the Portable Plus was first released it used a Gates battery similar to that used in the HP110 Portable. In addition, the charger provided a float voltage of only 6.9v, which was the lower float voltage rating for the Gates battery (it was rated at 2.3 to 2.4 Volts per cell, which comes to 6.9 to 7.2 volts for the 3-cell package). Unfortunately, we discovered that it took significantly longer than 4 hours at this float voltage to completely charge the unit from the 80% charge state. This resulted in the unit not being fully charged after an overnight charge (the typical charging strategy used by most portables). In addition, many users would let their unit discharge completely (and get a Low Battery warning) before recharging. The end result of these situations were:

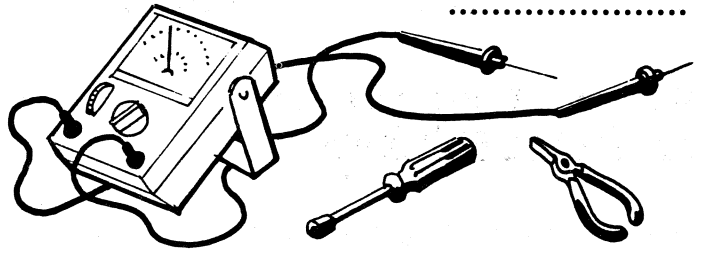
- Users who plugged their units in overnight would gradually notice a reduced charge capacity, and over

NEW!

Save money on repairs and upgrades

.....
90-day guarantee
on all repairs
and upgrades.
.....

Let our expert technicians fix your HP equipment — HP110, Portable Plus, ThinkJet, HP9114, HP150 computers and disk drives, and more!



HP Portable and HP150 users: If your equipment isn't working properly — or you've outgrown its capacity — don't throw it away!

Send it to us instead. We'll send it back running like a charm.

Repairs are as low as \$65. Most upgrades are \$250 or less. And we guarantee our work for a full 90 days.

To set up an appointment for a repair or upgrade, give us a call. Then send in your machine. We'll look at it for just \$25, then give you a firm price on parts and labor. If you decide to go ahead, the \$25 will be applied to the cost of our work.

Here are some typical charges:

- HP110 or Portable Plus screen replacement or upgrade: \$195
- HP110 or Portable Plus keyboard replacement: \$250

- HP110 or Portable Plus case replacement: \$175
- HP110 or Portable Plus internal modem replacement: \$195
- FastPlus upgrade (faster processor for Portable Plus) : \$250
- 256K to 512K upgrade for Portable Plus: \$395
- 128K to 512K upgrade for Portable Plus: \$495
- HP9114 repair: \$65-135
- HP ThinkJet repair: \$65-135

Other repairs depend on our cost of parts and a \$42/hour labor charge. You can expect a range of \$75-\$250 for repairing most HP Portable and HP150 computers and peripherals.

To extend the life of your HP equipment, call our repair service today!
(800) 373-6114. We guarantee you'll be pleased with the results!

an extended period of time this practice would result in a deep discharge condition and eventual battery failure. More dramatically, users who constantly deep-discharged their unit completely would find their battery failing after very few charge/discharge cycles.

- HP began an education campaign for users to warn them of the effects of constant deep-discharging. To simplify the process for users, HP recommended leaving the unit charging as much as possible. In addition, we increased the float voltage from 6.9v to 7.1 V (still within the specifications from Gates); this allowed us to reach the full-charge condition from the 80% level within 4 hours. (See Service Note 45711-07 for more details.)

Unfortunately, although this improved the situation, we still had a problem. It was determined that the probable cause for the continuing problem was still deep-discharging of the battery by users. The decision was made to switch from the Gates battery, P/N 1420-0346, to a new battery, P/N 45711-60990 (the same one used inside the HP 9114A/B Disk Drive Battery Pack.) Although it had a slightly lower charge capacity, it was still a 3-cell lead-acid battery, and was much more tolerant to a deep-discharge condition. In mid-1987 the switch was made to this new battery.

SUMMARY

That is the current situation with the Portable Plus battery

and charging circuitry. The majority of users who are still experiencing problems are those who leave their units plugged in all the time. The most probable cause of these continuing problems is the float voltage mentioned at the beginning of this article. As previously alluded to, the 45711-60990 battery is slightly different than the Gates originally used; it has a greater tolerance to deep-discharging and a slightly lower charge capacity. However, a third difference seems to have appeared; it is more sensitive to the float voltage applied. In particular, extending charging at the 7.1 v float voltage appears to "dry up" the battery and cause shortened battery life.

It should be remembered that there are many other possible causes for reduced battery life; in particular leaving the modem and/or serial port power supply on (caused by incorrect exiting from a data communications program or improperly configuring the power options). This may help to explain the problems some users have been seeing with battery life.

PROPOSED SOLUTION

Never charge your unit for longer than 24 hours at a time without then discharging the battery to at least the 80% level. This is not very user-friendly; however, it is the best alternative given the characteristics of the battery and charging circuit, and past experience with Portable usage. For those individuals who use their units primarily in an office environment plugged into the AC Adapter, a simple solution would be to use an appliance timer between the

solution would be to use an appliance timer between the AC Adapter and the AC source. Set it so that power is applied during the evening hours for recharging, but is disconnected during the day to allow the unit to discharge to the 80% level. (NOTE: This solution is viable ONLY for Portables used sufficiently during the day to discharge them to the 80% level, approximately 3 - 5 hours). ■

MS-Word Printer Drivers for the Portable Plus

[Special thanks to Craig Fullman of Hewlett-Packard in Torrance, California, for this contribution.]

By Craig Fullman

110 I love *The Portable Paper* and read every issue from cover to cover! I have learned a great deal and use the tools on the subscribers and DOStools disks.

YOU CAN USE

VERSION 4.0 OR 5.0 MS-WORD DRIVERS

Since two readers have written in to ask for MS-WORD printer drivers for the HP-DeskJet, I decided to contribute my knowledge to the subject. The basic difference between version 4.0 printer drivers for MS-Word and version 1.1 PRD's is the addition of new parameters that control the character width, italic & bold modes, and the bin3 sheet feeder. Version 5.0 printer drivers have even more new parameters. Otherwise, the drivers seem to be compatible. Beware that large .PRD files may require you to set the working memory of the Portable Plus higher to provide room for MS-Word to read the printer driver.

CONVERTING 4.0 OR 5.0 DRIVERS FOR USE WITH MS-WORD, VERSION 1.1

1. Run Makeprd -- , from the MS-Word 4.0 or 5.0 utilities disk, to create a document version of the .PRD you want to convert.
2. Delete the extra line of parameters -- from the 4th line of the .PRD file in version 4.0. Remove: **WidthSwap**, **DownloadFlag**, and **Linedraw**.
Delete a section of device formatting -- from version 5.0. Remove between the symbols: {M ... }M
3. Delete following rows from each Font Description --
 beginItalicmod:
 endItalicmod:
 beginBoldmod:
 endBoldmod:
 DLF:
 LineSpacing: [in version 5.0 only].
4. Delete the extra bytes in the PCSD table -- at the end of the .PRD file. Remove the lines containing **byte:70** to **byte:127**. In version 5.0, delete the bytes greater than 190 (i.e., **byte:194** to **byte:240**).
5. Be sure bytes 154-190 read as follows -- for the LaserJet:

```
byte:154 mod:2 magic:0 value:0
byte:160 mod:0
byte:164 mod:2 magic:0 value:0 "^ [&dD"
byte:170 mod:0 "^ [&d@"
byte:174 mod:0 magic:0 value:0 "^ [&a-45V"
byte:180 mod:0 "^ [&a+45V"
byte:184 mod:0 magic:0 value:0 "^ [&a+45V"
byte:190 mod:0 "^ [&a-45V"
```

6. Delete version 5.0 device codes between {DO ... }A -- so that the file ends with the lines:
 }P
 E
7. Edit the line at the top of the file -- it currently says **MAKEPRD x.x0**. Replace that with **CONVPRD 1.10**.
8. Save the file as UNFORMATTED!
9. Run CONVPRD from the 1.1 utilities disk -- to create a version 1.1, .PRD file.
10. Select this newly created .PRD file -- from PRINTER OPTIONS menu.

MS-Word gives marvelous control over the LaserJet and DeskJet printers! I recommend it to anyone who is serious about controlling the format of their documents. I also discovered that escape sequences for the LaserJet can be typed in MemoMaker and then loaded as a file into MS-Word. This gives very nice grey scale borders and other capabilities to good old version 1.10 of MS-Word! To best use this capability the *LaserJet series II Printer Technical Reference Manual* P/N 33440-90905 is a must. The best tutorials I have used are the Peter Rinearson books:

Word Processing Power with Microsoft Word and Microsoft Word Style Sheets

The 1987 versions of these books are fine, since they don't say anything about the newer features of MS-Word 5. The style sheets book includes the content for some powerful and well-organized style sheets. They are interchangeable to automatically create many different page layouts from the same .DOC file. Unfortunately, the disk that is offered with the book is not compatible with version 1.10, so one has to type the style sheets in from the book.

.PRD DRIVER DISK AVAILABLE

Craig sent Personalized Software a disk containing the HP developed .PRD printer driver files for the original HP-DeskJet font cartridges. They will work on the Portable Plus or the HP150, with version 1.10 of MS-Word. He also included a few LaserJet .PRD drivers that he uses on his LaserJet series II. These are MS-Word, version 4.0 and version 5.0 drivers that he converted back to version 1.1. If any reader wants to know how to convert other version 5.0 printer drivers back to version 1.1, there is a file on the disk with instructions for this conversion. If you want Craig's disk, please send Personalized Software \$9.50 and ask for "The MS-Word Printer Driver Disk." ■

HPduette

It transfers files both ways between your Portable Plus and your desktop computer without an HP-IL card!

An HP-IL card inside your IBM PC or compatible computer lets you transfer files to and from your Portable Plus.

It's a good solution to the data transfer problem, *provided* you only use one desktop computer. But if you ever need to transfer data between your Portable Plus and someone else's desktop computer, you're stuck—or at least you were until now.

Because now there's a way to do it with software.

It's a program called HPDuette. Together with a special serial connecting cable that it comes with, HPDuette is all you need to transfer files at high speed both ways between your Portable Plus and any IBM PC compatible desktop.

RECOMMENDED FOR:			
HP110 Portable		Portable Vectra	
Portable Plus	•	HP150	
IBM PC and compatibles			•

HPDuette performs complete error checking during the transfer process to ensure data integrity. It handles multiple-file transfers, subdirectory transfers, and DOS "wild card" usage. It lets you use DOS commands such as type, list, rename, and erase without having to exit the program. And it transfers data *faster* than you can with an HP-IL card.

HPDuette is easy to use too. Simple menus and easy-to-understand help screens are available at all times.

For true convenience in file transfer to and from your Portable Plus, order HPDuette today.

**HPDuette with cable for Portable Plus . . . \$99.95
\$89.95 for Portable Paper subscribers.**

PRODUCT NO. DU11NS

HPDuette is a registered trademark of Platte River Associates, Inc.



HPduette comes with a serial cable and two disks; you load one disk into your Portable Plus and the other into the desktop.

HPDuette transfers data at 57,600 baud. To use HPDuette, you connect the 9-pin serial port on your Portable Plus to the serial port on your desktop computer using the serial cable that comes with the program.

60-DAY MONEY BACK GUARANTEE

See order form for details.

TO ORDER

Use enclosed postage-paid order form or send check or credit card information (#, exp. date, signature) to:

Personalized Software
P.O. Box 869, Fairfield, IA 52556 515 472-6330

© Copyright 1988 Personalized Software

More on HP's Decision to Discontinue Portables, Ambiguity About Future

[The following article is excerpted from an HP Management Roundtable on September 14th of last year, at INTEREX. Mike Naggiar, Director of Marketing for the Personal Computer Group answered a question from the floor on HP's decision to leave the laptop business.]

110 "Hewlett-Packard has decided not to continue to invest in the laptops; the reasons were very simple. Quite frankly, we came to the conclusion that we were trying to spread our resources too thin -- too many products, and we have decided that there are certain products that just had to go and the laptop unfortunately was one of them. The other issue has to do with the fact that when you spread your R&D resources too thin you end up falling behind the market, so you are trying to balance doing the few things well and staying in the forefront of those few things rather than trying to do too many things not too well. Unfortunately, we chose not to continue to invest in the laptop business. I understand there is some work being done to identify other manufacturers that make good laptops and make sure that those will work with our software. At the present time we are in the process of qualifying three

different vendors (one of which is merging and not yet fully announced; this one has some very interesting capabilities) and making sure that all of our software works with those. As you witness those very powerful portables capable of running products like NewWave, those products will be there and will be certified by HP." ■

Tough Testing at HP

HP abuses its prototypes to make sure HP products don't abuse you.

By Richard Hall

110 Hewlett-Packard has a long reputation for manufacturing quality products. HP cut its teeth designing and building rugged test equipment, to exacting standards, for a variety of industries. Early-on HP developed a commitment to quality assurance, and that commitment remained strong when they entered the design and manufacturing of computers.

Sunnyvale, California is the home of HP's quality-assurance lab, where HP puts its prototype computers through a nightmare of "abuse testing." The goal of the Sunnyvale lab is to find the fundamental design mistakes and fix them long before the manufacturing divisions get their hands on the product (manufacturing has its own quality-assurance testing). Some of the tests include:

- **Shaking** -- Shipping can be tough on computers, but this test far exceeds the worst shipping handler you could imagine. HP engineers strap computers to a metal platform and shake them up and down, and side to side for 10-20 minutes.
- **Dropping** -- Hal never drops his Portable Plus (well, almost never). But HP seems to think that a reasonable percentage of computer users do, so they devised this one. Both in and out of the boxes, machines are bolted onto a platform, which is dropped three feet.
- **Shocking** -- To develop machines with a high electric shock tolerance, HP exposes each prototype to 25,000 volt shocks, 50,000 times.
- **Temperature Fluctuation** -- HP "roasts and freezes, waters and blow dries" its machines on the outside chance that some of its customers may live in the Sahara or Alaska. All prototypes are exposed to temperature extremes: from 150 to 5 degrees, Fahrenheit (-15 to 66 degrees Centigrade). Machines are placed on racks in a special room and alternately heated and chilled. The transition between the two extremes causes high humidity and even rain. A 60 mph wind machine keeps the temperature even throughout the room.

Anyone who has ever owned a Portable Plus, or any other HP portable, knows how rugged HP products are. It makes us appreciate what we have, and regret even more HP's decision to get out of the portable market. ■

Tough Times for HP's No-Layoff Policy

110 Over the years HP has done a good job balancing costs and profits and has long had a reputation for not laying off employees. However, over the last few years the balancing act has become more difficult, and recently HP has decided it has 500 too many employees. HP has given these employees the option of accepting a new assigned position, finding a new job within HP, or leaving.

Over the years HP has gone through a number of expansions. The few contractions it has undergone have been done without layoffs.

Since HP shut down its main fabrication shop in Loveland, Colorado, it has made a subtle change in its personnel policy. The goal was to change employee's focus from "job security" to "employment security." In addition, HP has offered programs to help reduce the overall number of employees including a popular early retirement plan and a voluntary severance scheme with generous severance benefits.

CURRENT SITUATION REQUIRES MORE DIRECT ACTION

HP's current problems involve staff imbalances centered mostly in the Network Systems Sector (NSS) located mainly in Cupertino, California. HP's main focus is balancing the

workforce rather than downsizing and has frozen external hiring in favor of internal applicants.

The first phase of "excess" reduction is a "voluntary excess" program, where those who would like to relocate put themselves on an "excess list." HP then "drafts" other staff members to complete the excess quota. Employees on the excess list get three months to find another job within HP. If the employee is unsuccessful, management takes over and attempts to find a job that matches an employee's current position, salary, and geographical location. However, there are no guarantees. The employee is offered another position within HP. Turning down the second such offer is viewed by management as a resignation.

HP organized a large, well-attended job fair, with representatives from almost all of HP's hiring divisions within the U.S. 'Since there are not enough internal positions available in the Bay area, the choice for many will be relocate or leave the company. Certain functions seem to have been harder hit than others. Research and development at the Network Systems Sector appears to have made deep cuts. HP is trying to redeploy R&D people to divisions that were doing well, notably those involved with peripherals and instruments. The Information Networks Division was also hard hit by the excess program.

HP appears to have handled the excess program well, from the perspective of employees. Information was given out to everyone in the division at the same time, and meetings were held to discuss the causes, and employee options.

Morale is a little down at HP these days. Still, most employees say they understand the necessity of the excess program and appreciate the fact that it's not a layoff. And even though some employees may choose to leave HP rather than relocate, most stand behind their commitment to HP, and HP's commitment to them. ■

Steve Martin -- a "Wild and Crazy" HP Fan

[Special thanks to HP Measure Magazine, September - October, 1989 issue.]

110 He may be a wild and crazy guy on stage, but in private, entertainer Steve Martin is a very serious guy -- and serious about his passion for HP equipment.

P+ "I have lots of Hewlett-Packard equipment spread around various houses and apartments in Southern California and New York," Steve told *Measure* during a July telephone interview from his Los Angeles office. "I have several QS/16s (HP Vectras) and LS/12s, HP LaserJet printers and so forth. Victoria (Steve's wife, actress Victoria Tennant) gets my hand-me-downs."

PV Steve's love for HP equipment goes back more than three years when he first thought of buying a portable computer.

(Continued on page 37.)

USED HP PORTABLES AND PERIPHERALS

USED HP110 Portables
Portable Pluses
HP150s
HP9114 Disk Drives
HP-IL ThinkJets
HP-IL Converters
Video Interfaces
HP Software
HP ROMs
and more

(If you've bought a 1- or 2-megabyte RAM drawer, we'll even buy your old RAM drawer and extra memory!)

We buy them.

No longer using your HP Portable or peripherals? Turn them into cash through The Portable Equipment Exchange. Prices fluctuate, so call us for current figures.

We sell them.

Buying used HP equipment makes sense. You know HP quality! Even used HP machines can serve you well for years. Call for current prices.

We guarantee them.

Any used item you buy from us can be returned within 30 days for a full refund. In addition →

ONE-YEAR GUARANTEE
(parts and labor)
on all used equipment!

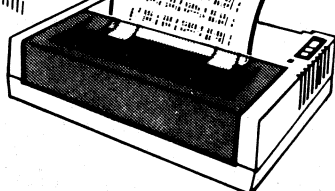
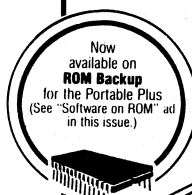
(515) 472-6330

The Portable Equipment Exchange
—a division of Personalized Software
P.O. Box 869 Fairfield, IA 52556

© Copyright 1987 Personalized Software

For good buys on used—and new—HP equipment, see our 4-page brochure enclosed with this issue.

No more cutting and pasting— Now you can print it sideways!



SIDEWINDER

SideWinder is published by Southern Software

At last! Sideways printing for the HP Portable, Portable PLUS, and ThinkJet!

(And the HP150, Vectra, IBM PC, MS-DOS computers, and most HP graphics printers.)

RECOMMENDED FOR:	
HP110 Portable	•
Portable Plus	•
Portable Vectra	•
HP150	•
IBM PC and compat	•
Available on ROM Backup for the Portable Plus	

It's called SideWinder, and it's perfect for Lotus 1-2-3 print files, MemoMaker files, or any other text (ASCII) file that's too wide for a normal page.

Just type in the file name, and SideWinder does the rest, printing up to 53*rows *sideways* - for as long as your paper supply lasts. You'll never need to cut and paste again!

SideWinder's high-quality graphics characters are indistinguishable from ordinary characters, and SideWinder prints just as fast as your ThinkJet can.

In addition, a built-in mini text editor lets you get inside your print files and easily create **double-width** characters and underlines.

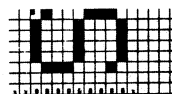
SideWinder \$69.95
\$59.95 for Portable Paper subscribers

PRODUCT NO. SW11NS

SideWinder 1.01 owners may upgrade to current version 2.01, which supports 8 chars/inch, by sending Personalized Software \$7.50 or by mailing a self-addressed \$.39 stamped envelope and the SideWinder master disk.

OPTIONAL EXTRAS: Southern Software of New Orleans, creators of SideWinder, have also created two companion utilities that work only on The HP Portables:

SideChar lets you create your own sideways characters.



NAME
 @ to Null # to Print
 ! to Load @ to Store
 Select to toggle block
 Cursor keys to move

Simply fill in a grid on your Portable to modify SideWinder's built-in characters... create italics... Hebrew letters... integral signs... whatever sideways characters you wish.

Sketch & Print lets you make line drawings on your screen using the cursor and function keys.



It's a lot like those Etch/Sketch toys you played with as a child. (Actually, it's even better because you can draw not just horizontal and vertical lines, but also *diagonals* with a single key.) Sketch & Print also lets you print - and save - anything you draw on the screen.

\$10 for both utilities when purchased with SideWinder

★ For a complete graphics software program, see ad for "Sketch" in this issue.

Order form and guarantee are on inside back cover or send check or credit card number to Personalized Software, PO Box 869, Fairfield IA 52556 (515) 472-6330.

*105 rows for QuietJet Printer

© Copyright 1987 Personalized Software

Lotus and 1-2-3 are registered trademarks of Lotus Development Corp.

PORTABLE VECTRA VIEWS

[Vectra Views contains information which specifically pertains to the Portable Vectra CS and Vectra LS/12 Laptop PC. In this column we note the latest developments in Portable Vectra and LS/12 products from Hewlett-Packard, Personalized Software, and other third parties, and include specific tips for Vectra and LS/12 users. Please feel free to contribute on disk or letter to Personalized Software, PO Box 869, Fairfield, IA 52556, or call (515) 472-6330, FAX (515) 472-1879.]

LS/12's Sold Out, Some Parts May Be Hard to Come By

LS/12 HP no longer has any LS/12 units available for resale. That means HP, a pioneer in the portable computer industry, no longer has any portable computers for resale.

In addition, LS/12 (Zenith 286 SuperSport) products may be hard to find. HP no longer sells the following parts and accessories:

Part	Part #
1MB Memory Expansion Card	D1054A
80C287 Numeric Coprocessor	D1053A
2400 bps Internal Modem	D1052A
NiCad battery pack	D1057A
External battery charger	D1058A

Furthermore, Zenith recently cut two-thirds of its dealers. That means other products such as the external numeric entry keypad and the expansion chassis may be hard to come by. Enough third parties exist that distribute modems, extra memory, and the faster processor, that these should continue to be available. If you have needs, contact us, and we'll do our best to locate your product in a timely and economical manner.

In particular, we will sell American Cryptons 1MB and 4MB EMS modules for the LS/12. The 1MB retails for \$295 (\$285 to subscribers) and the 4MB retails for \$1195 (\$1095 to subscribers.) ■

MS-DOS 4.01 and the Vectra LS/12 Making the Fast Even Faster

By David Hughes

PV
LS/12

Who would ever believe that it could be possible to improve the performance of the HP Vectra LS/12 by upgrading to a newer version of MS-DOS? It was an accidental discovery for me when I inadvertently turned on my Zenith SuperSport 286 with an MS-DOS 4.01 system disk left in the A drive. Although my experiences are for the Zenith SuperSport, the HP Vectra LS/12 should be similar.

Portable Vectra users should also notice a performance increase, but I was unable to make the test. (If a reader does, be sure to write in.)

WHY DOS 4.01?

There are many good reasons to upgrade your SuperSport's or Vectra's operating system to MS-DOS 4.01. MS-DOS 4.01 has many more external DOS commands, an enhanced batch file processor, a friendly, mouse-driven file manager, and an MS-DOS applications shell. Very nice indeed, but why purchase DOS 4.01 if version 3.3 works just fine? It is my opinion that the greatest reason for upgrading to MS-DOS 4.01 is that you can achieve significantly better hard disk performance when DOS 4.01's **SMARTDRV** disk cache and **FASTOPEN** utility are installed in conjunction with the **ZEMM** expanded memory manager (ZEMM on the 1990 Subscribers disk). The computational performance index of the CPU also improves a little.

IMPROVED SYSTEM PERFORMANCE

Running MS-DOS 3.3 PLUS, Norton's System Information (SI) reported that my LS/12's hard disk index (DI) was 3.5, relative to the standard IBM PC-XT. I reported on page 10 of the January/February 1989 *Portable Paper* that the LS/12's computation index (CI) was 12.9. The Performance Index (PI) was somewhere around 8.9 - 10.0. That was the bad news. Now for some good news.

I tested my SuperSport 286 with various combinations of SMARTDRV and FASTOPEN, and found that the best performance was using both with the ZEMM expanded memory manager. The table which follows summarizes my findings.

As the table on the next page illustrates, the best performance was achieved when both FASTOPEN and SMARTDRV are used. The results were based on 736K allocated to DOS, 224K as expanded memory. SMARTDRV was allocated a 128K cache in expanded memory for all of my tests. FASTOPEN was installed in the normal DOS workspace, not expanded memory. The slowest performance seemed to be when FASTOPEN was used without the SMARTDRV disk cache.

The difference between the highest and lowest performance measurements was roughly 30%. The reason the ZEMM expanded memory manager was so important is because it is possible to allocate up to a whopping 96k additional memory for DOS, bringing the DOS total to 736K. 128K of expanded memory was be allocated to SMARTDRV for a disk cache, and the remainder available to applications that use expanded memory.

EIGHT ways to make your LS/12 Vectra or Portable Vectra CS more productive!

Transfer your files to another PC without hassle!

Highly rated **LapLink** software offers high-speed file transfer between your Vectra and another IBM PC compatible using **LapLink's** special cable. Versatile (works with parallel and serial ports) and easy to use (simple manual or automatic file tagging).

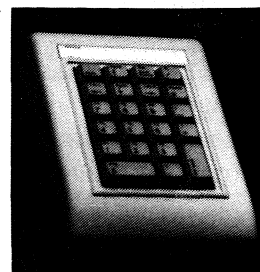
LapLink for PV, LS/12 la11ns
Retail: \$139; Subscriber: \$119



Fast numeric entry for your LS/12!

The **Zenith Numeric Keypad** plugs into the right side of your LS/12. Calculator-style numeric keypad simplifies spreadsheet and database numeric entry tasks.

Numeric Keypad, LS/12 nu11nh
Retail: \$129; Subscriber: \$115



Access any Ethernet network with your Vectra!

Xircom Pocket Ethernet Adapter attaches to your Vectra (or any PC compatible) parallel printer port. It lets you connect to any Ethernet LAN, supporting Novell NetWare versions 2.0a and higher. It's 5 oz: the size of an audiocassette case.

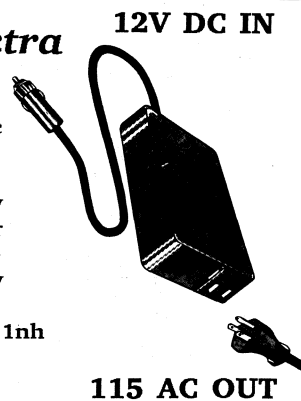
Ethernet Adapter, LS/12, PV et11nh
Retail: \$695; Subscriber: \$629



Recharge your Vectra while driving!

Plug your Vectra recharger into the 4.5" x 3.5" x 1.3", 1 lb, **PC100+ StatPower Pocket Power Inverter**. Recharge your Vectra battery by connecting the PC100+ to your car's cigarette lighter. The PC100+ provides instant 115V power from any 12V source.

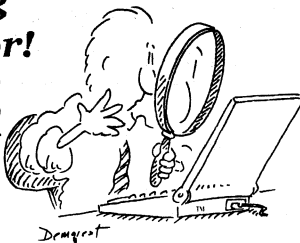
StatPower PC100+ PV, LS/12 st11nh
Retail: \$179; Subscriber: \$169



No more squinting to find your cursor!

Why search for a faint underline? Make Vectra cursor **BIG and BOLD** with **NoSquint** and see the cursor clearly without strain.

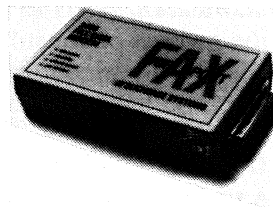
No-Squint PV, LS/12 no11ns
Retail: \$39.95; Subscriber: \$37.95



Fax your files anywhere, anytime!

Now you can have both a 9600 bps Group III facsimile and a full-featured 2400 bps modem in one completely portable, pocket-sized unit! Share the **WorldPort 2496** among different PC's, or use it just for your work and travels. Connects to Vectra serial port and can operate from its own battery or from AC power.

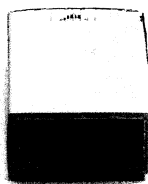
WorldPort 2496 PV, LS/12 wf11nh
Retail: \$699; Subscriber: \$599



Back up your LS/12 hard disk files to tape!

Tallgrass Technologies top-quality tape backup unit backs up LS/12 #20 or 40 Meg hard disk. Connects via LS/12 floppy disk connector in back. HP lab tested and approved.

LapTape Backup Unit, LS/12 la11nh
Retail: \$795; Subscriber: \$695



Access files from 5.25" floppies using your LS/12

Weltech 5.25" disk drive plugs right into the LS/12 external drive port in back of LS/12. Can read from and write to 360K and 1.2M floppy disks.

Weltech 5.25" drive LS/12 we11nh
Retail: \$349. Subscriber: \$299

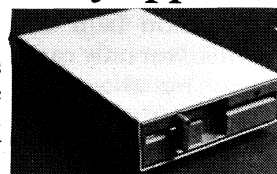


Table 1
Performance Test

Condition	CI	DI	PI
MS-DOS 3.3	12.9	3.5	8.9 - 10
MS-DOS 4.01	13.4	3.5	10.1
MS-DOS 4.01 with SMARTDRV (no FASTOPEN)	12.5	8.5	11.1
MS-DOS 4.01 with FASTOPEN (no SMARTDRV)	11.7	3.5	8.9
MS-DOS 4.01 with FASTOPEN & SMARTDRV	13.4	8.5	11.6
CI -- Computational Index DI -- Disk Index PI -- Performance Index			

SMARTDRV AND FASTOPEN HIGHLIGHTS

SMARTDRV is a device driver for MS-DOS 4.01 that utilizes either extended or expanded memory as a memory cache for your hard disk. Caching means that frequently-accessed files are held in memory. When an application requires information from a file on the hard disk, the cache is checked first. If the data is found, it is read from memory in lieu of the disk. Thus, we save the time necessary to reposition the hard disk drive head and seek the right place in the file.

FASTOPEN places directory and file allocation table information (FAT) in two memory buffers. This speeds up the process of consulting the disk-based directory and file allocation table for frequently-used files.

OTHER MS-DOS 4.01 BENEFITS

A second major advantage of upgrading to MS-DOS 4.01 is the DOS SHELL and FILE MANAGER. I have grown fond of the DOS Shell, because it does exactly what I want it to do when I load my application software - it virtually disappears from DOS memory, with the exception of a very small kernel that reloads the shell after your program has terminated. You can add applications to the opening menu, application help descriptions, and individual user passwords. Not only can you add individual applications to the menu, but also application submenus, or groups. If you use a mouse, you can navigate the DOS Shell with it. Once you do your homework and configure the shell, you can pick applications by name.

The MS-DOS FILE MANAGER is a friendly, easy to use file manager. You can select a group of files to copy, move, or delete. A directory tree makes hard disk navigation easy. It is possible to associate a group of files with an application, so for example, when you open a document created

with WordPerfect, WordPerfect automatically loads. File operations are a snap when you can view and operate on files located in two separate subdirectories simultaneously. You can change file attributes, and view file data from within the FILE MANAGER. It's hard to believe that such a robust program would come bundled with MS-DOS.

UPGRADING TO MS-DOS 4.01

The results are surprising: MS-DOS 4.01 improves the hard disk performance of your computer, if configured correctly. Even though the Zenith and the HP laptops come with MS-DOS 3.30, you should have little problem purchasing MS-DOS or PC-DOS 4.01 from your local dealer.

[On My Soapbox, David's regular column, will appear again in the next edition of The Portable Paper.] ■

Removing the Portable Vectra's LCD Screen/Case Cover

PV Not everyone likes the LCD screen on the Portable Vectra, and quite a few users remove it and connect the Vectra to an external monitor. HP describes how to do this in the Vectra's Set-up Guide, on pages 2-9. Here's a simpler, more effective set of instructions.

1. Make sure both the Vectra and the external monitor are off.
2. Open LCD screen/case cover to a vertical position.
3. Slide the release latches on the back of the Vectra toward the center while, at the same time, lifting the LCD screen straight up and off the computer. ■

Stuck Interlock Switch Causes Non-stop Beeping on LS/12

LS/12 The LS/12 (or Zenith SupersPort) will beep if you turn it on when the case is closed or close the case while the LS/12 is turned on. The cover is held closed by two latches that fit into slots to the lower left and right of the keyboard. An "interlock switch" is in the inside of the right-hand slot and is depressed by the right-hand latch when the case is closed. If the system is on, depressing the switch cause the LS/12 to beep.

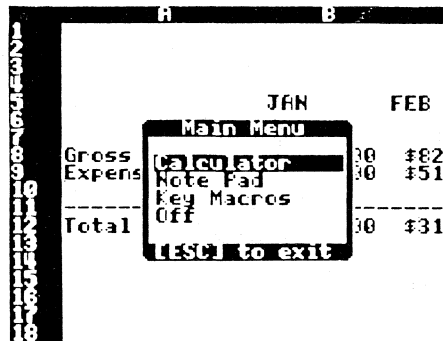
Occasionally the interlock switch can become stuck in the depressed position. Whenever you turn your LS/12 on, the beeping continues. Use a paper clip, or other long, thin object to delicately "tickle" the switch until it becomes unstuck. ■

Shelp

Recommended by Hewlett-Packard, and used by more than 1,000 of their employees.

It's a program called **Shelp** (*shell + help*), and it runs on the Portable Plus from within any non-graphics program. Here's all you do:

Press [Ctrl] [Shift] [Extend char] and up pops the Shelp menu, right in the middle of your application (Lotus in this example):



SideKick and SuperKey are registered trademarks of Borland International, Inc.

Instant Access Pop-ups for the Portable Plus: Calculator • notepad • macros • and more

"A great, easy-to-use productivity booster. If there's one program every Portable Plus owner should have, it's Shelp."—Hal Goldstein, Publisher, The Portable Paper

The menu gives you 4 choices: Calculator, Notepad, Key Macros, and Off.

Choose **Calculator** and get a 4-function calculator that works just like a pocket calculator with memory. You can:

- save results in ten different storage registers and retrieve them again with two quick keystrokes
- "paste" results at the cursor location in whatever application you were using when you invoked Shelp.

Choose **Notepad** and a "scratch pad" pops up on your screen. Type whatever you want into it, exit to your application, and then recall the notepad whenever you want.

No more having to scribble notes on paper to remind you of phone numbers, things to do, or bright ideas!

Choose **Key Macros** and you can assign "strips" of up to 31 typewriter characters to any of the 26 letters in the alphabet. This saves you having to type the same phrase over and over again.

Example: If you type "United States" a lot, you could assign the entire phrase to the "U" key. Just move the

cursor to "U" in the Keyboard Macros menu and type "United States."

To recall "United States," simply press [Ctrl] [Extend char], then [U]. Presto—"United States" appears at the cursor location in your application!

Choose **Off** and your Portable Plus turns off without having to return to P.A.M., and without having to save your application file. When you turn your computer back on, you'll be in the same place in the same application, with no data lost.

All the capabilities of IBM-PC programs like Borland's SideKick and SuperKey? Certainly not, but Shelp's the only such program for the Portable Plus. It's a clean, easy-to-use, and highly useful helper you'll want at your fingertips always.

Shelp runs on the Portable Plus only. It works with Time-Manager, MemoMaker, Reflection 1, Lotus, and any other non-graphics program. (Shelp does not run with MS Word.)

Shelp was written by Randy Salo, the former HP engineer who authored MemoMaker on the original HP Portable.

PRODUCT NO. SH11NS

Shelp\$55 (\$49.95 for Portable Paper subscribers)

60-day no-risk trial: If, after 60 days you are dissatisfied with this product for any reason, you may return it for a full refund. **To order,** use the postage-paid form at the back of this issue, or send check or credit card number to: Personalized Software, P.O. Box 869, Fairfield, IA 52556 515/472-6330

© Copyright 1987 Personalized Software

Diagnostic Software for GM Automobiles

PV On-board computers have been part of General Motors automobiles since 1981. Today's GM systems incorporate high performance central processing units as well as a vast array of sensors and controls. Until DIACOM, expensive "professional" equipment was needed to access this sophisticated system for diagnostic purposes.

LS/12

DIACOM LINKS PC COMPATIBLES TO GM ON-BOARD COMPUTERS

DIACOM is a software program that installs on a Portable Vectra, LS/12, or any other IBM compatible laptop, which is then connected (through the parallel port) to the GM on-board computer using an interface cable and adapters provided with the package. DIACOM utilizes the processing capabilities of the Vectra and provides the user with "an extensive set of diagnostic features," according to Rinda Technologies, its developers.

SYSTEM FEATURES

The main screen of DIACOM displays a wide variety of engine parameters including engine speed, coolant temperature, manifold and barometric pressure, air flow rate, spark advance, battery voltage, fuel mixture status, and more. In addition, DIACOM will display a flashing "trouble

code indicator," with an explanation, any time active trouble code data is received.

DIACOM also includes a comprehensive information database, which is accessed through the INFO mode. Select any displayed vehicle parameter and DIACOM will provide up to a full screen of concise, easy to understand, technical information on that topic for quick reference. Other features include:

- Support of 1981 and newer GM vehicles;
- Real time, full screen diagnostic display;
- Intermittent event capture/data logging;
- GM Trouble Code detection and explanation;
- Menu-driven command structure;
- On-line technical information;
- Diagnostic report generation;
- English/metric unit selection;
- User configurable options;
- One year limited warranty.

SYSTEM REQUIREMENTS

DIACOM installs on any PC,XT, or AT compatible and needs 256K of RAM and DOS 2.0 or higher to run. Your machine must have a parallel printer port and one floppy drive. Both the LS/12 and the Portable Vectra fit the bill. DIACOM comes with software, a comprehensive instruction manual, and a cable and adapters to connect the LS/12 or Vectra to the GM car's on-board computer.

(Continued on page 24.)

MAXIMUM POWER FOR YOUR PORTABLE PLUS



Easy-to-use, lightning-fast ROM chips save valuable Portable Plus memory and eliminate the need for a disk drive.

The most powerful and unique feature of your Portable Plus is that it lets you store programs on ROM (Read-Only Memory) chips for instant access.

Almost all other portable computers require a disk drive in order to function. A disk drive—even a portable one—is a bulky piece of equipment, easily breakable, and slow in loading programs.

By contrast, a ROM chip weighs next to nothing, is virtually indestructible, and lets you load programs instantly. (Programs on ROM chips don't take up any space on your Edisc.)

All of which means that your 9-pound Portable Plus is **the fastest, most portable, and most reliable computer you can own**—provided, of course, you take full advantage of its ROM technology.

YOUR SOFTWARE DRAWER WAS MEANT TO BE FULL

The engineers at Hewlett-Packard designed the Portable Plus so it could accommodate an optional "software drawer" containing 12 ROM sockets. Clearly, their intention was that those sockets be filled with useful programs.

But if you're like most Portable Plus users, you probably are using

just a few of the sockets for ROM-based programs like Lotus 1-2-3 or MemoMaker.

That's fine as far as it goes, but if you aren't using *all* the ROM sockets—or if you have to carry around an HP9114 disk drive wherever you go—*then you are not using your Portable Plus to full advantage.*

To start using the *full* potential of your Portable Plus, look over the chart at the far right. It contains more than 50 programs and utilities available on ROM chips from Personalized Software.

Taken together, these ROMs cover *every application you're likely to need*—from word processing to spreadsheets to data

communications, graphics, programming languages, and more. Which means once you install these ROMs, you'll have everything you need right inside your Portable Plus. *You'll never have to carry a disk drive again.*

We invite you to browse through the chart, read the information at the right, and then order one or more ROMs today. You'll find them to be fast, reliable, and an incredible boost to your productivity.

Whatever your reason: to free up valuable memory space... to eliminate the need for an external disk drive... or just for the convenience of lightning-fast program loading, *fill your software drawer with ROMs* and you'll turn your Portable Plus into the powerhouse its designers intended it to be.

With our exclusive Double Guarantee, the risk is all ours. Why not order right now?

P.S. If you have questions about any of the ROMs, give us a call. Brian or David will be happy to make some recommendations as to which ROMs might best meet your needs for word processing, spreadsheets, or whatever applications you're interested in.

EASY TO INSTALL

We supply clear instructions and diagrams with every ROM order. If you prefer, send us your software drawer and we will install your ROMs for you—and test them—at no charge.

To remove your software drawer, first back up your A drive (so you won't lose your data), then use an ordinary screwdriver to remove the two outside screws on the drawer.

You won't be able to use your Portable Plus without the software drawer, so we recommend you call us first to make sure the ROMs you want are in stock, and to set an appointment for installation.

That way, we can install and test your new ROMs the day we receive your software drawer, then ship your drawer back that same evening. Return shipping within the Continental U.S. via UPS Second-Day Air is free for all orders over \$200. Please add \$15 to your order if you want overnight return shipping.

(In most cases, if you set an appointment in advance and use overnight shipping both ways, you'll only be without your software drawer for less than two business days. We'll ship the manuals and other materials in advance by surface carrier so you'll have them by the time you receive back your software drawer.)

HOW TO ORDER ROMS

To order, use the postage-paid order form in the center of this issue. For even faster service—or if you have questions about any of our ROMs—give us a call.

OUR EXCLUSIVE DOUBLE GUARANTEE ON ROMS

60-DAY GUARANTEE OF SATISFACTION

If, within 60 days, you are dissatisfied with a ROM product for any reason, you may return it for a full refund.

2-YEAR GUARANTEE AGAINST DEFECTS:

If a ROM proves defective at any time within 2 years, we will replace it at no charge.

IMPORTANT INFORMATION ABOUT OUR ROMS

We offer two kinds of ROM chips. One kind we produce ourselves; these are offered as part of our "ROM Backup Packages" (see below). The other kind are manufactured by Hewlett-Packard; we call these simply "HP ROMs."

ROM Backup Packages

A ROM Backup Package includes both the disk version of a program and the ROM version—plus the standard User's Manual and additional instructions for installing and using the ROM. (In the chart, prices of products marked "PS" are for entire ROM Backup Package.)

According to the agreements we have with the original software vendors, our ROM version is considered a backup copy of the disk version. Unless you already own the disk version, we cannot sell you the ROM Backup by itself.

Please note:

1. If you purchased the disk version of a program from us, we have that in our records. If you purchased the disk version elsewhere, you will need to show us proof of purchase before we can sell you just the ROM Backup.

2. Prices for ROM Backups alone are as follows:

Best of DOS Tools	.....	\$129.
The Editor	.....	95.
Games (Chess+4)	.....	105
HPDuette	.....	95.
HPPrint	.....	95.
Shelp	.....	55.
SideWinder	.....	55.
Shelp + SideWinder	.....	95.
Sketch	.....	95.
Squish Plus	.....	135.
SuperROM	.....	49.
TermPlus	.....	95.
Turbo Pascal 3	.....	95.
Typing Whiz	.....	95.
Webster's Speller	.....	179.
WordPerfect	.....	295.

3. It is important that you read and adhere to the licensing agreement that comes with the disk version of any software you buy, because the same agreement applies to the corresponding ROM Backup. In most cases, this means you can use only one version of the software at a time on only one computer system at a time. Remember, the ROM is a *backup* copy of the software, not an independent second copy.

HP ROMs

The HP ROMs that we sell do not include (or require) the corresponding disk versions. They are the same ROMs that HP sells, except ours are used—which turns out to be *better* than buying them new. Here's why:

Unlike other used products you can buy, there are no moving parts on a ROM, and nothing that can wear out. Because of this, our two-year guarantee against defects applies to used HP ROMs as well as to our own ROM Backups. (Two years is twice the guarantee against defects that Hewlett-Packard offers.)

Our used HP ROMs are also covered by our unique 60-day guarantee of satisfaction.

Best of all, our used HP ROMs are priced as much as 50% below retail. Look at the chart at the right and compare! (In the chart, "Retail price" of HP ROMs is HP's price new. "Subscriber price" is our price used.)

SOFTWARE AVAILABLE ON ROM

For product details, see individual ads elsewhere in this issue, in our catalog, or refer to articles in past issues. In this chart, "Type" refers to either HP (used HP ROM) or PS (Personalized Software ROM Backup Package—price includes both ROM and disk versions). **CALL FOR AVAILABILITY OF USED HP ROMS.**

Product	Part Number	Retail Price	Subscriber Price	Type	No. of chips	Notes
WORD PROCESSORS						
WordPerfect 5	WD11NK	\$919.00	\$595.00	PS	6	384K of files includes PlusPerfect, main WP program, help files, printer drivers, etc. Does not include required 300K wp.fil file, spelling checker, or thesaurus.
The Editor II	ED12NK	224.00	194.95	PS	1	The Editor version 1 is available as part of our SuperROM chip (see "Combined ROMs," below).
MemoMaker	-	-	-	HP	-	Comes on same chip as Time Manager (see "Combined ROMs" below.)
MSWord	MS20UR	394.00	199.00	HP	1	
MultiMate	MM20UR	520.00	295.00	HP	1	
WORD PROCESSING UTILITIES						
Format110	-	-	-	PS	-	Comes as part of SuperROM (see "Combined ROMs")
FormatPlus	FP13NK	174.95	164.95	PS	1	
HPrint	HP12NK	175.00	170.95	PS	1	
Mini PrinterTalk	-	-	-	PS	-	Comes as part of SuperROM (see "Combined ROMs")
Webster Speller	WB13NK	258.95	248.95	PS	2	
SPREADSHEETS AND UTILITIES						
Lotus 123,1A	LT12UR	495.00	295.00	HP	2	
Lotus 123,2.01	LT15UR	625.00	395.00 ²	HP	3	3rd ROM containing help doesn't have to be installed.
Lotus 123,2.01	LT11HR	625.00	499.00 ²	HP	3	Pricing of NEW HP ROM if used ROM not available.
SideWinder	SW12NK	134.95	124.95	PS	1	Also available on a ROM with Shelp, and on our SuperROM chip (see "Combined ROMs" below).
DATABASE PROGRAMS						
Exec Card Manager	EC11UR	395.00	225.00	HP	1	(Lotus 1-2-3 can also be used as a database.)
COMMUNICATIONS						
PC2622	PC13UR	395.00	239.00	HP	1	VT100 and HP Terminal emulator.
Reflection	RF11UR	525.00	295.00	HP	1	Minor upgrade of PC2622
TermPlus	TE13NK	194.95	174.95	PS	1	Includes FormIBM, Jetctrl, and other great utilities.
PRODUCTIVITY BOOSTERS / GAMES						
Best of DOS Tools	DT12NK	179.00	168.95	PS	2	Selected utilities from DOS Tools ¹
FilePlus	FE14NK	164.95	154.95	PS	1	
Games (Chess + 4)	GA11NK	215.00	175.00	PS	2	Chess, Go-Moku, TigerFox, FastMind, Othello
HP Calculator	CL11NK	95.00	95.00	PS	1	From our 1987 Subscriber Disk
HP Duette	DU13NK	194.95	184.95	PS	1	Contains Portable Plus half of software
Shelp	SH12NK	110.00	104.95	PS	1	Includes note extraction program. Shelp also available on a ROM with SideWinder, and as part of SuperROM chip (see "Combined ROMs" below).
Time Manager	-	-	-	HP	-	Comes on same ROM as MemoMaker (see "combined ROMs" below).
Typing Whiz	TW12NK	144.95	134.95	PS	1	
Squish Plus	SQ11NK	264.00	234.95	PS	2	
GRAPHICS						
Sketch	SK12NK	175.00	170.95	PS	1	(Lotus 1-2-3 can also be used for graphics.)
PROGRAMMING LANGUAGES						
MSBasic	MS21UR	331.00	165.00	HP	1	This is not GWBASIC.
COMBINED ROMs						
MemoMaker/TimeMgr	MM21UR	245.00	119.00	HP	1	
Shelp,SideWinder	SH13NK	234.95	214.90	PS	1	Also includes SideWinder enhancement utility.
SuperROM (5 programs on one chip):The Editor, Format110, Mini PrinterTalk, Shelp, Sidewinder	SU11NK	474.00	299.00	PS	1	Mini PrinterTalk is the abbreviated version included on the PrinterTalk disk; it is functionally equivalent to Printertalk for most applications. Shelp and SideWinder are the same versions as on the individual ROMs described above.
BUNDLES						
Editor Pack +	FM17NK	823.00	599.00	PS	5	(Editor II, Webster, FormatPlus, FilePlus)
Editor Pack	FM16NK	658.00	499.00	PS	4	(Editor II, Webster, FormatPlus)

¹Utilities included in the Best of DOS Tools ROM backup Package are as follows. For program details, see catalog.
 PACK DUMP TY CYPHER RENDIR WHEREIS TEE SDL FDATE LABEL DIRS TRANSLIT
 CLEAN DIRALL ARCE MOVE OFF CHANGE ARCS20 MOVEALL TRIM BEEP SQPC SM
 VDL TMA TJETA FCOPY ASK PRNCONF WAIT FGREP XCOPY FDUMP COPYNEW
 Note: ARCS20 is shareware; the author normally requests a \$35 contribution. However, we've already paid your user fee.

²IMPORTANT: All HP ROM prices given in this chart (unless otherwise stated) are for used ROMs. Used HP ROMs (especially Lotus 2.01) are sometimes not in stock. Call to verify availability of used HP ROMs and pricing on new HP ROMs if used ROMs unavailable.

Official Personalized Software Price List

(Every attempt is made to keep pricing stable. However, prices subject to change without notice.)

Product	Part Num.	Retail Price	Subscr. Price
---------	--------------	-----------------	------------------

THE PORTABLE PAPER

(Subscribers Disks Only Available With Subscriptions)

1990 Subscription & Disk PPN1PS \$55.00

HP Portable Resource Package

For HP110 & Portable Plus: PL11PK 154.00
(includes 1990 subscription & disk, 1986-89 back issues & disks)
For Vectra CS: VE11PK 89.00
(includes 1990 subscription & disk, 1988-89 back issues & disks)
For LS/12: LS11PK 69.00
(includes 1990 subscription & disk, 1989 back issues & disk)

Back issues

For HP110 & Portable Plus: PP14PB 99.00
(includes 1986-89 back issues & disks)
For Vectra CS: PP15PB 59.00
(includes 1988-89 back issues & disks)
For LS/12: PP12PB 39.00
(includes 1989 back issues & disk)
Individual Back issue PP99PB 9.20

PP Binder Vol.1 PB11NM 7.00
PP Binder Vol.2 PB12NM 7.00
PP Binder Vol.3 PB13NM 7.00
PP Binder Vol.4 PB14NM 7.00
PP Binder Vol.5 PB16NM 7.00
PP Binder Vol.1-5 PB15NM 29.00

Free Catalogs

HP Portable CATPOR 0.00
HP150 CAT150 0.00

SOFTWARE AND ACCESSORIES

Word Processors

The Editor II ED11NS 129.00 99.95
Editor Pack FM16NX 289.00 195.00
(Editor II, FormatPlus, Webster Speller)
Editor II Disk Upgrade ED14NG 35.00 35.00
The Editor II/Formatter ED13NX 149.95 119.95
VI (Unix-like editor) VI11NS 195.00 169.00
WordPerft 4.2 ss HP150 WD12NS 435.00 339.00
WordPerft 4.2 ds HP150 WD11NS 435.00 339.00
WordPerft 5.0 ds HP150 WD13NS 495.00 395.00
WordPerfect 4.2 P. Plus WD18NS 435.00 339.00
WordPerfect 5.0 P. Plus WD17NS 645.00 395.00
(Includes PlusPerfect)
PlusPerfect WD14NS 150.00 129.00

Word Processing Utilities

Format110 FM12NS 39.95 35.95
FormatPlus FP11NS 79.95 69.95
FormatPlus Upgrade FP14NG 35.00 35.00
MemoMaker Pack FM14NX 159.90 125.00
(Format Plus, Webster Spelling Checker)
Formatter FM11NS 59.95 49.95
HPrint HP11NS 80.00 75.95
PrinterTalk PT11NS 49.95 44.95
PrinterTalk, Format110 PT12NS 89.90 59.95
RightWords Dictionary Ext. RW12NS 29.95 29.95
RightWriter RW11NS 95.00 89.00
Webster Speller WB11NS 79.95 69.95
WordPlus Speller WP11NS 150.00 99.00

Database/Accounting Software

Condor 3 CR11NS 495.00 379.00
Condor Jr CR13NS 99.95 89.95
Dac-Easy Accounting DC11NS 150.00 129.00

Communications

WorldPort Modem 1200 WM11NH 199.00 179.00
WorldPort Modem 2400 WM12NH 359.00 319.00
WorldPort Modem 2400/MNP WM13NH 499.00 425.00
WorldPort cable WM14NM 30.00 20.00
WP 1200 Upgrade kit WM13NG 199.00 179.00
WP Acoustic coupler WM16NH 79.95 79.95
Kermit KE11NS 19.00 19.00
Relay Gold (Plus) RG11NS 295.00 279.00
TermPlus TE12NS 99.95 79.95
Term110 TE11NS 99.95 79.95
CompuServe starter kit CM11NS 39.95 35.95

Productivity Boosting Utilities / Games

BacTools BC11NS 49.95 39.95
Games (Chess + 9) GA11NS 99.95 69.95
DOS Tools DT11NS 44.95 39.95
FilePlus FE12NS 69.95 59.95
HP Duette DU11NS 99.95 89.95
HP150 PC Emulator PC11NS 19.95 19.95
Norton Utilities Adv. NU12NS 150.00 129.00
Norton Utilities PR11NS 99.95 89.95
PrintMaster (P.Plus) PR11NS 79.95 69.95
Private File PF11NS 39.95 34.95
ReadHP RD11NS 79.95 69.95
Shelp SH11NS 55.00 49.95
Squish Plus (P.Plus) SQ11NS 129.00 99.95
Squish Plus (Vectra) SQ12NS 99.95 89.95
Tiger Fox TF11NS 32.95 29.95
Time Manager SB11NS 9.50 9.50
Typing Whiz TW11NS 49.95 39.95

Graphics

Logitech Mouse MS14NM 119.00 99.95
Logitech Mouse P.Plus System MS15NM 219.00 179.95
P.Plus Mouse Sftwre MS11NS 70.00 60.00
P.Plus Mouse Cable MS13NM 30.00 20.00
Sketch SK11NS 80.00 75.95
Sketch Halftone disk SD11NS 9.50 9.50
Flowcharting II+ FL11NS 229.00 199.00

SpreadSheet and Statistics

101 Macros MC11NS 69.95 62.95
Lotus 123, v2.01 / Symphony
P.Plus Software Driver LT14NS 69.95 59.95
SideWinder and Utilities SW13NS 79.95 69.95
SideWinder SW11NS 69.95 59.95
Statistix 2.0 ST11NS 169.00 159.00

File Transfer

HPDuette for P.Plus DU11NS 99.95 89.95
LapLink LA11NS 139.95 119.00
Link110 LK12NS 90.00 85.95
Link Plus LK11NS 90.00 85.95
Link150 LK13NS 90.00 85.95
ReadHP RD11NS 79.95 69.95

Programming

Turbo Pascal 3.0 Optimizer TP17NS 125.00 119.00
Turbo Pascal 5.5:
for P.Vectra, LS/12, IBM PC TP55NS 150.00 135.00
for Portable Plus, HP150 TP52NX 219.00 175.00
Upgrade for P.Plus, HP150
(must own IBM PC Turbo 5.5) TP15NS 69.00 69.00

Project Management

PertMaster for HP110 PR11NS 695.00 499.00
PertMaster for P.Plus PR12NS 695.00 499.00
PertMaster for HP150 PR13NS 695.00 499.00
PertMaster for Vectra PR14NS 695.00 499.00
Milestone ML11NS 99.95 89.95

LS/12, Portable Vectra Products

1 Meg EMS Memory (LS/12)	EM11NH	295.00	285.00
4 Meg EMS Memory (LS/12)	EM12NH	1195.00	1095.00
Diconix printer - parallel	DT11NH	519.00	399.00
Diconix printer - serial	DT12NH	539.00	415.00
EtherNet Adapter	ET11NH	695.00	629.00
Expansion Chassis (LS/12)	EX11NH	499.00	449.00
HP-IL Card-P. Vectra CS	HP16NM	245.00	235.00
LapLink	LA11NS	139.95	119.00
LapTape (LS/12)	LA11NH	795.00	695.00
NoSquint	NO11NS	39.95	37.95
Numeric Keypad (LS/12)	NU11NH	129.00	115.00
Squish Plus	SQ12NS	99.95	89.95
Statpower PC100+ Inverter	ST11NH	179.00	169.00
TravelDisk			CALL
(10MB to 250MB New or Used Hard Disks for P.Vectra)			
Weltec 5.25" Drive (LS/12)	WE11NH	349.00	299.00
Weltec Serial Hard Disk (PhD)	WE12NH	1099.00	899.00
WorldPort Fax 2496	WF11NH	699.00	599.00

Peripherals & Accessories

10 3.5" disks/case	DS11NM	64.90	29.95
10 1.44Meg 3.5" disks	DS12NM	99.95	69.95
FieldPro Padded Case for ThinkJet or HP9114 Disk Drive	CS11NM	39.95	37.95
HP9114 Empowerer	PR12NM	99.95	89.95
Mobile Recharger	PR11NM	69.95	59.95
Numeric Keypad for P.Plus	TS11NM	139.00	135.00
Power Cube	PR13NM	89.95	79.95
Targus Leather Case	TA11NM	199.95	179.00
Targus Nylon Case	TA12NM	99.95	89.95

Learning Material

How to Use the HP			
Portables Video Tapes	VP11NM	150.00	119.00

Upgrade

FastPlus (CPU upgrade)	FA11NG	250.00	250.00
256K to 512K Plus Upgrade	256KNG	395.00	395.00
128K to 512K Plus Upgrade	128KNG	495.00	495.00

PORTABLE PLUS SOFTWARE ON ROM

If the product number ends with "UR", it is a used HP ROM. If it ends with "NK", it is a new Personalized Software disk plus ROM backup. The price in the "Backup Price" column is valid only for those who already own the software disk.

Product	Part Num.	Retail Price	Sub Backup Price
Word Processors			
WordPerfect 5	WD11NK	940.00	595.00 295
The Editor II	ED12NK	224.00	194.95 95
MMkr/TmMgr	MM21UR	245.00	119.00
MSWord	MS20UR	394.00	199.00
MultiMate	MM20UR	520.00	295.00
Editor Pack + (Editor II, Webster, FormatPlus, FilePlus)	FM17NK	823.00	599.00
Editor Pack (Editor II, Webster, FormatPlus)	FM16NK	658.00	499.00

Word Processing Utilities

FormatPlus	FP13NK	174.95	164.95 95
HPrint	HP12NK	175.00	170.95 95
Wbster Speller	WB13NK	258.95	248.95 179

Spreadsheets and Database

Lotus 123,1A	LT12UR	495.00	295.00
Lotus 123,2.01	LT15UR	625.00	395.00
New ROM: Lotus 123, 2.01	LT11HR	625.00	499.00
Exec Crd Mgr	EC11UR	395.00	225.00
SideWinder	SW12NK	134.95	124.95

Communications

PC2622	PC13UR	395.00	239.00
Reflection	RF11UR	525.00	295.00
TermPlus	TE13NK	194.95	174.95 95

Productivity Boosters / Games

DOS Tools	DT12NK	179.00	168.95 129
FilePlus	FE14NK	164.95	154.95 95
Games (Chess + 4)	GA11NK	215.00	175.00 105
HP Calculator	CL11NK	95.00	95.00
HP Duette	DU13NK	194.95	184.95 95
Shelp	SH12NK	110.00	104.95 55
Squish Plus	SQ11NK	264.00	234.95 135
Typing Whiz	TW12NK	144.95	134.95 95

Graphics

Sketch	SK12NK	175.00	170.95 95
--------	--------	--------	-----------

Programming Languages

MSBasic	MS21UR	331.00	165.00
Turbo Pascal 3	TP13NK	No longer published 95	

Combined ROMs

Shelp,SdWindr	SH13NK	234.95	214.90 95
SuperROM	SU11NK	474.00	299.00 49
(Editor I, Format110, PrinterTalk, Shelp, SideWinder)			

USED PORTABLE EQUIPMENT

IMPORTANT NOTE TO USED EQUIPMENT BUYERS: Call for availability before placing order (especially Lotus 2.01). If used product unavailable, we'll get you new item at discount.

Used HP110 and Portable Plus Computers

Like-new 512K Plus ^{2,3}	PP36UC	\$2795 ¹	\$1295
Used 512K Plus ²	PP15UC	2795 ¹	895
128K Plus ²	PP11UC	2590 ¹	495
Int.modem with Plus purchase	BM11UC	600	167
Internal Modem	BM11UC	600	399
HP110 Portable ²	PQ11UC	3000 ¹	495
HP110,ThinkJet,HP9114 ²	PP40UX	4300 ¹	795

Used Printers For HP110, Portable Plus, Vectra

HP-IL ThinkJet Printer	TJ11UC	\$ 495	\$ 199
New DeskJet Plus Printer	DJ12HC	995	795
Used DeskJet Printer, cable	DJ11UC	795	425
New DeskJet Printer	DJ11HC	795	639

Used HP110/Portable Plus Disk Drives

HP9114A Disk Drive	DD11UC	\$ 795 ¹	\$ 199
HP9114B Disk Drive	DD12UC	795	299

Used HP Portable Plus Memory Drawers

HP 1 Mg RAM Drawer	MM11NC	\$1275	\$ 995
384K HP RAM Drawer	MM12UC	982 ¹	295
128K HP RAM Drawer	MM13UC	436 ¹	150
128K HP Memory Card	MM14UC	273 ¹	125
HP ROM Software Drawer	SW11UC	195	99

Miscellaneous Used HP Portable Peripherals

HP-IL Card For IBM PC	IL11UM	195	119
HP-IL 7470A Plotter	PL11UM	1095 ¹	650
P.Plus V.Intfce+Monitor	VM12UM	750 ¹	275

NEW BATTERIES, INK CARTRIDGES AND CABLE

Standard Parallel Cable	PL11NM	29.95	24.95
Serial printer cable (110,Plus)	SC13NM	42.00	27.95
HP92221P ser.prm cab 110,P+	SC13HC	42.00	42.00
Portable Plus Battery	BT11HC	49.95	49.95
ThinkJet Battery	BT14HC	47.00	47.00
HP110 Battery	BT12HC	29.00	29.00
HP9114 Battery	BT13HC	65.00	65.00
HP-IL Cable, 1 Meter	HC11HC	8.00	8.00
ThinkJet plain paper cartridge	TJ15HC	10.95	10.95
ThinkJet inkjet paper cartridge	TJ14HC	10.95	10.95
HP92261N inkjet 2500 zfold	TJ12HC	64.95	59.95

¹Denotes products no longer manufactured. "Retail Price" items was the price at the time of discontinuance. These items are excellent buys.

²Many items on this price list are discounted further with the purchase of an HP110 or a like-new or used Portable Plus. Call, or write for special 4-page Portable Plus brochure.

³All like-new Portable Pluses come in original packaging with new battery and new manuals.

(Continued from page 19.)

ORDERING INFORMATION

DIACOM is available through Mextel, Inc., 159 Beeline Drive, Bensenville, IL 60106, and retails for \$299.

SUBSCRIBERS CAN SPECIAL ORDER DIACOM through Personalized Software for \$275. Please call us at 515-472-6330, or FAX us at 515-472-1879. ■

Get HP BASIC on a PC with HTBasic

PV HTBasic by TransEra gives you the complex engineering applications capabilities of HP BASIC (found on the HP 9000 series 200/300 BASIC workstation) plus other advanced features you won't find with other PC BASICS. Included are a complete set of HP graphic commands, integrated HPIB (GPIB) syntax for intelligent instrument control, the advanced I/O Path system, and built-in matrix math and optional HP binaries. All this comes with the full screen program editing and debugging environment.

Stephen Bartold, a *Portable Paper* subscriber, informs us that the HTBasic compiler has a utility which lets you read disks formatted on HP technical workstations under LIF.

ORDERING INFORMATION

HPBasic was developed by TransEra, Inc. of Provo, Utah. A DOS PC version, suitable for an XT-compatible 8086 or AT-compatible 80286 machine (like the LS/12) retails for \$500 without GPIB support, \$650 with GPIB support and drivers, and \$900 with GPIB support and GPIB card.

SUBSCRIBERS CAN SPECIAL ORDER HPBasic through Personalized Software and receive a 5% discount off the retail price. Please call us at 515-472-6330, or FAX us at 515-472-1879. ■

Zenith SupersPort to Sell Through Sears

PV Zenith Data Systems (ZDS) will soon begin selling its SupersPort with a 20MB hard drive (equivalent to HP's LS/12) through the electronics departments at Sears retail outlets. IBM and Compaq have been already been testing PC sales through Sears. ZDS was sold at the end of 1989 to Groupe Bull, a company owned primarily by the French government. ZDS drastically reduced the number of its authorized dealers in November. ■

Update on Valitek Parallel/Serial Port Tape Backup System

PV In last issue we discussed the Valitek tape backup system as a solution for backing up the Portable Vectra or LS/12 hard drive. The Valitek unit connects to either HP Portable via the parallel or serial port. Backup speed through the

parallel port is comparable to the speed of a traditional tape backup unit that uses a controller card installed into a PC. Serial backup is quite a bit slower but still functional.

The advantage of this portable unit is that you can take it to any PC compatible, attach it to the PC's parallel or serial port, and backup the PC's hard disk. That PC could be a Portable Vectra, LS/12, or a desktop unit.

Since publishing the article, Valitek announced a new unit, new pricing, and a new 800 number (800-VALITEK). Valitek now sells a 160 Meg unit along with the 60 Meg unit we reviewed last week. The 160 Meg unit retails for \$2395, the 60 Meg unit for \$1695. Subscribers can order the 60 Meg unit from us for \$1495 and the 160 Meg unit for \$1995.

Parallel Port Expansion Chassis

PV Michael French of Sunnyvale, CA called me and told me about a new product, ex-PORT from Lightek of Richmond, VA. Ex-PORT is an expansion chassis which connects to the parallel port of any laptop or desktop PC. One slot connects the host computer via a parallel printer cable, the remaining two slots accept 8-bit PC compatible modems, hard drives, controllers, additional serial or printer ports, or a variety of off-the-shelf network cards, analog/digital control cards, and so forth.

Although it sounds promising, from our discussion with users, most want to be able to use a high resolution, color, EGA or VGA monitor with their Vectra. Unfortunately, separate drivers must be written for the video controllers, and Lightek suspects that screen performance may be slow. We'll keep you abreast of progress as these drivers get written, and we can test a unit.

Other uses of the expansion chassis for LS/12 and Portable Vectra users are solved by other products. Network users should consider the Xircom Pocket Adapter (Vol.4, No.4, Pg.18, Vol.4, No.5, Pg.10) that connects to the parallel port. Users desiring an external hard drive might choose the slow but reliable Weltec PhD serial hard drive (Vol.4, No.6, Pg.16). Portable Vectra users can also choose a faster Travel Disk with a controller designed for the Portable Vectra. Finally, LS/12 and Portable Vectra users desiring a tape backup system should consider the Valitek tape backup unit described above. LS/12 users can also choose LapTape, the Tallgrass tape backup unit (Vol.4, No.4, Pg.24).

On the other hand if you have need for more than one of these peripherals or you have PC compatible peripherals readily available, you might consider the ex-PORT unit. ■

Receive FAX's on Your HP LaserJet

PV A large percentage of the subscribers to our newsletters use HP LaserJet printers. JetFax, a desktop fax controller/laser printer interface, turns a LaserJet into FAX receiver.

110 JetFax lets you avoid the use of expensive and unattractive thermal fax paper. With JetFax you receive clear faxes on plain cut-sheet paper. JetFax is fast, receiving transmissions at 9600 baud. It prints fax documents immediately if printer is available or stores fax documents to be printed as soon as printer is free.

JetFax can share an existing fax line for outgoing calls while incoming faxes are received on the laser printer. You can even connect up to three JetFax units to a single LaserJet for high-volume fax applications.

JetFax is small (7" x 2" x 18.5") and weighs approximately 9 lbs. It works with an HP LaserJet or compatible printer that has a parallel port and at least one megabyte of internal memory. It prints letter- or legal-sized documents and can reduce the incoming image up to 65% of the original.

Output print speed is approximately two pages per minute but largely depends on the printer and document being printed. With the optional JetFax Accelerator for the LaserJet Series II, a fax sheet is printed as fast as it is received.

The JetFax connects to the printer through a 3' cable lead with a standard 36-pin, male parallel printer cable. The PC, file server or printer share connect to the JetFax's 36-pin, female parallel printer port. JetFax connects to telephone line using a standard RJ11C receptacle. It receives its power through an external AC power supply.

SEND FAXES TOO

JetFax/PC transmission software (sold separately) lets you fax computer-generated files (i.e. document or graphics files) as easily as printing them. JetFax/PC permits any number of users with access to a JetFax-equipped laser printer to transmit individual or multiple files from their computer. The software comes on 5.25 or 3.5 inch disks.

ORDERING INFORMATION

JetFax and JetFax/PC were developed by HYBRID Fax, Inc., 978 Hamilton Court, Menlo Park, CA 94025. Phone number is 415-369-0609. JetFax with 1/2 MB of internal memory retails for \$1,195. JetFax with 1 MB of internal memory retails for \$1,395. A single copy of JetFax/PC software (available sometime in February) retails for \$195. A site license for the software will cost \$395.

SUBSCRIBERS CAN SPECIAL ORDER JetFax or JetFax/PC through Personalized Software. The 1/2MB JetFax costs \$1075, the 1MB JetFax costs \$1275. JetFax/PC software costs \$180. Please call us at 515-472-6330, or FAX us at 515-472-1879. ■

NEWS FROM



Personalized Software INC.

Products that make HP Portables smarter

P.O. Box 869, Fairfield, Iowa 52556 515 472-6330

By Hal Goldstetn

Chess and Other Games for The Portable Plus

P+ Thanks to Ed Keefe, Richard Burmeister, Cliff Looyenga, and Everett Kaiser we now have chess and a number of other interesting programs available both on disk and ROM for the Portable Plus.

Here is a list of games that will offer on the Portable Plus games disk.

LIST OF GAMES

- Chess -- the classic game of strategy. This version needs at least 184K of main memory.
- Go-Moku -- is kind of like a Japanese version of "Tic-Tac-Toe" but much more sophisticated. Players take turns placing stones on a 19x19 board. The first player to get five stones in a row wins the game.
- Othello -- is an outflanking game played on an eight-by-eight grid board. As you flank or cut off a row of the opponents pieces, they become your pieces. The game ends when all squares are occupied and the winner is the player occupying the most squares at the end of the game;

- Fastmind -- is a code breaking game. As you guess, Fastmind tells you how many digits of the guess were correct and in the right place, and how many digits were correct but in the wrong place. Guess until you break the code.
- Landmine -- lets you to navigate a mine field, trying to avoid the mines. Try to go from the upper left corner to the lower right corner without hitting any mines.
- Yahtzee -- roll 5 die, and try to get specific combinations for a maximum score. Players take turns until all categories of combinations are filled in and the highest score wins.
- Memory -- is a game of finding matching pairs among a set of overturned cards (kind of like the old "Concentration" game).
- HP-Amateur -- asks a series of questions and comes to a conclusion based upon a "rule file". For example, two rule files have been provided: ANIMAL and ACTUARY. If you selected ANIMAL, you would choose an animal and then answer a series of questions asked by the program. The program will try and guess which animal you're thinking of. You can write your own rule files.
- FoxHound -- is a strategic chase game. Try to get your hound to box in the fox in less than 20 moves without letting the fox get to square number 1.
- Tic-Tac-Toe -- is the simple game played on a three-by-three grid where you try to get three "X's" or "O's" in a row;

Thanks to some newly discovered compression techniques (more on this in a future issue) we were able to squeeze five games on two 64K EPROMs. These include CHESS, GO, OTHELLO, FASTMIND, and TIGERFOX. TIGERFOX is a Pac-Man kind of maze and chase game. The disk version is sold separately. (However you do not need to purchase the disk version of TigerFox to receive the ROM version).

Let us know how you enjoyed these games. If you know of any other games that are well suited to the Portable Plus, send them our way.

ORDERING INFORMATION

The Portable Plus games disk retails for \$99.95, \$69.95 to subscribers. TigerFox on disk is \$32.95, \$29.95 to subscribers.

The games 2 ROM backup package is \$175 and includes TigerFox (\$215 to non-subscribers). ■

We Are Now Set Up to Repair or Upgrade Your HP110, Portable Plus, or HP150 Equipment

110 **P+** Send us your tired, your defective, your broken HP equipment, and we'll fix or upgrade it. Our goal is to save you money on normal repair or replacement costs. In most cases, we'll be able to fix your HP Portable for between \$75 and \$250 including parts and labor.

Call us up and make an appointment to send in your machine. We'll look at it for just \$25 (applied to repairs if you decide to do so) and tell you your actual cost for labor and parts. It takes quite a bit of time to take the Portable Plus and especially the HP110 apart -- so the \$25 refundable cost is a good deal.

In general, here is how we will charge (for either the Portable Plus or the HP110):

- Screen replacement or upgrade: \$195
- Keyboard replacement: \$250
- Case replacement: \$175
- Internal modem replacement: \$195

Other HP110 / Portable Plus / HP150 repairs depend on our cost of parts and a \$42/hour labor charge. In most cases expect a \$75 to \$250 price range for HP Portable equipment. Additional service options include:

- Portable Plus, FastPlus Upgrade (speeding up processor): \$250
- Portable Plus 256K to 512K Upgrade: \$395
- Portable Plus 128K to 512K Upgrade: \$595
- HP9114 repair: \$65-\$135
- ThinkJet repair: \$65-\$135 ■

Spring Sale

110 **P+** We have been in business for five years. During that time we have inventoried software and bought and sold used HP equipment. It's probably no surprise to anyone running a retail operation that we have managed to accumulate excess inventory. Reasons vary: Sometimes we made a good buy, sometimes we made a bad buy, sometimes we overstocked. We've put together a list of such items that we will sell at a significant discount, usually around our cost. The list is included with this issue of *The Portable Paper*.

Here are some examples of some of the products we will be discounting and why:

- Used 128K based Portable Pluses with new screen -- we picked up a number of these machines which we will

be able to sell very inexpensively.

- Just like new Portable Pluses with European keyboards and chargers -- When we purchased many like new U.S. Portable Pluses, some had Swedish, German, French, and Italian keyboards. These machines come in the original box, the batteries have never been used. They are "like new" because we, not HP, will honor the 1 year warranty.
- MultiMate ROMs -- we managed to pick up eight of these in the original packaging, never opened. According to David Hughes who reviewed MultiMate several years ago (Vol.2, No.6, Pg.26), MultiMate probably represents the best word processing ROM package available.
- HP9114B disk drives -- we purchased a number of these, never used, and in their original packaging that we will offer at a special price.
- T/Master -- this is the only Portable Plus integrated package and the price has gone up significantly, so we are going to discontinue it. We will sell our 4 remaining copies at the old price.
- Logitech Mouse -- We have regularly sold our Logitech mouse package for the Portable Plus. By mistake, about a year ago our buyer bought way too many Logitech mice. Every time I go back to stock, I see this pile of Logitech mouse packages that should be working with someone's Plus rather than sitting in our back room.

The list goes on and includes used WordPerfect 4's, Video Interface adapters, HP acoustic couplers, and much more. Specific product information accompanies this newsletter.

You are probably safest to call in your order, since we can not honor these prices once the inventory goes. ■

HP150 Catalog

If you own an HP150 and have not received our latest free HP150 catalog, give us a call or drop us a line. The catalog says "Spring, 1990" on the top right and has a picture of a dinosaur with a line going through it.

In the catalog we provide a complete list of used Hewlett-Packard HP150 equipment and software along with Personalized Software and other third party software packages for the HP150, including our best sellers for the HP150 - WordPerfect and ReadHP. ■

Print Preview Driver for WordPerfect on Plus

- P+** Many thanks are in order to Sergio Biguzzi for creating a graphics driver for WordPerfect 5.0 on the Portable Plus. That means, thanks to Sergio, that Portable Plus WordPerfect users can preview their WordPerfect file in graphics mode on the Portable Plus screen before printing. That way whether you use boxes, different font sizes, page numbering, or sophisticated graphics, you will be able to see how the printed page will look without having to actually print it.

Erased your files? Get them back with The Norton Utilities!

HOW TO RESTORE DELETED FILES

It happens to the best of us. One slip of a finger and a whole week's worth of text or data is past history. *But not if you have THE NORTON UTILITIES!*

Just type **qu** (for quick unerase), give the first letter of the name of the file you erased, and *the file gets restored*. Miraculous as it sounds, in many cases that's all there is to it!

HERE'S HOW IT WORKS

How can a deleted file get unerased? Simple. The file isn't really deleted in the first place. When you delete a file, all that actually gets erased is part of the file's directory entry. (That's why it only takes an instant to delete an entire file.) Without a directory entry, DOS can't find the file, but THE NORTON UTILITIES can.

Now, what about those cases where you can't possibly recover a file because you've already partially overwritten it with other files? Surely THE NORTON UTILITIES can't help you then?

VERSION 4.0 OR ADVANCED EDITION —WHICH ONE SHOULD YOU BUY?

If you have an HP110, The Advanced Edition does not work. If you have a Portable Plus or HP150, The Advanced Edition of The Norton Utilities includes all of Version 4.0, plus many additional features. Among these are:

1. **Speed Disk:** Packs the files on a floppy, electronic, or hard disk more efficiently. This reduces disk head wear and significantly reduces the time it takes to save or retrieve a file.

2. **Advanced "NU" Program:** Undeletes blocks of text from disks that have become "corrupted" (unreadable by DOS). Also lets you access and modify the DOS directory and F.A.T. table.

3. **Format/recover:** Restores all the files on a hard disk if you have accidentally reformatted it. (Note: this feature does not work on the HP150 or Portable Plus.)

Our recommendation: If you have a hard disk, or want to be able to manipulate directories, or need to access ASCII data from non-HP formatted disks, use the Advanced Edition.

Wrong—they can! THE NORTON UTILITIES won't recover the entire file, of course, but they *can* help you restore the portions of the file that still remain on the disk.

It's done with a powerful utility called **nu** that lets you display, change, and capture to a file any information on any disk. In complex cases you may need to

"Indispensible."
—PC Magazine

"You'll bless this disk."
—Peter McWilliams
(The Personal Computer Book)

"Don't compute without it."
—The New York Times

do some detective work, but **nu** will help you find whatever remains on the disk, thereby saving you from countless hours of retyping lost data.

POWERFUL FILE MANAGEMENT COMMANDS

In my opinion, *the ability to recover lost files alone makes THE NORTON UTILITIES well worth the price*. But there's even more to the package: THE NORTON UTILITIES are also an excellent *disk management system*. Here are some examples of what you can do:

Let's say you want to sort directories and files physically on disk—either by name, extension, size, date, time, or by any combination of these. Just use the **ds** (disk sort) command. I use this one to sort my electronic disk files by size all the time. Then when I display the directory, the larger files come at the end of the list, and I can see at a glance which ones to move elsewhere to free up any needed amount of disk space.

Or let's say you remember putting the phrase "a penny saved is a penny earned" into a text file on your floppy or hard disk but you can't remember which file it was—or even which directory. How to find it? *No problem*. Just type **ts** (for text search), specify the phrase, and the program will display every occurrence of the phrase, identifying each occurrence by directory and file.

Or let's say you can't remember which subdirectory you put a given file into. Instead of hunting for the file manually,

"THE NORTON UTILITIES are among the most helpful utilities I've run across. I use them myself every day, and in my opinion, they're a must. Here's why."

Hal Goldstein, Publisher
The Portable Paper

just type **ff** (find file) and specify the name of the file and the directories to search through. The program does the rest.

Other useful features include the **fa** command, which lets you change file attributes (for example, to convert HP150 read-only files into erasable files), and the **fs** command, which tells you the total file size of a group of files (I often use it to find out the total disk space occupied by my Lotus worksheet "WKS" files or by all my text files from a given project).

CUSTOMIZED TO YOUR COMPUTER

Because of their great helpfulness and ease of use, THE NORTON UTILITIES are a best-seller in the IBM PC market. Personalized Software is authorized to distribute them on 3½" disk for users of the HP150, HP110 and Portable Plus. (All it takes is a few keystrokes to customize THE NORTON UTILITIES to your machine; just follow the simple customization instructions included on the disk.) Also included in our package are the standard 5¼" disk sold by Peter Norton for IBM PCs.

THE NORTON UTILITIES are a time-saver for you and a life-saver for your data. Use them just once and you'll wonder how you ever did without them. Order your copy at no risk today.



THE NORTON UTILITIES

DATA RECOVERY
DISK MANAGEMENT

THE NORTON UTILITIES 4.0 . . \$99.95
Portable Paper Subscriber Price . . . \$89.95
PRODUCT NO. NU11NS

THE NORTON UTILITIES
ADVANCED EDITION \$150.00
(includes Version 4.0)
Portable Paper Subscriber Price . . \$129.00
PRODUCT NO. NU12NS

RECOMMENDED FOR:

HP110 Portable	•	Portable Vectra	•
Portable Plus	•	HP150	•
IBM PC and compatibles			•

P+ I have already put the driver to good use. I copied my LaserJet printer driver onto the Portable Plus from my Portable Vectra. That LaserJet printer driver contains all the font information used in printing *The Portable Paper*. (We use a Bitstream Garamond soft font typeface.) I did not have to copy any of the actual soft font files, since I wasn't going to be actually printing from my Plus. I can now write my articles and advertising pieces from my Portable Plus and do a print preview to make sure the layout is correct without needing access to my LaserJet.

Using Sergio's 3K driver also requires the 13.7K WP-SMALL.DRS file found on the WordPerfect1 / WordPerfect2 master disk. Then it is just a matter of using the setup menu by pressing **Shift F1, Display, Graphics Screen Type**, and choosing the **HP PORTABLE PLUS 480x200 mono** selection. To use the print preview feature in WordPerfect, you need only to press **Shift F7, View**. I used the little-known **Shift F3** (switch) feature to permanently make the print preview screen black on green rather than Sergio's default, green on black.

Sergio also sent me a WordPerfect 160K dictionary file that can be substituted for the 300K dictionary that comes with WordPerfect 5.0. Sergio converted the 160K dictionary from a WordPerfect 4 version so that it could be read by WordPerfect 5. The advantage of the smaller dictionary, is that it occupies less electronic disk space. However, you probably will want to build an axillary dictionary since the smaller, older version misses surprisingly common words such as "dear", "version" and "graphic". Since the WordPerfect dictionary is so fast and easy to use, it still may be worth using even in its abbreviated form to catch typos and actual misspellings.

If anybody has access to an ASCII dictionary in the neighborhood of 100-150K, give me a call. We should be able to convert it using the WordPerfect 5 Spell utility. If we can get it within 128K, the dictionary would become ROMable, which would be great for WordPerfect users.

We will send all those who bought WordPerfect 5 (or PlusPerfect) from us a disk containing both the dictionary and Portable Plus screen driver at no charge. If you haven't received your disk by now, give us a call.

From now on, all orders for WordPerfect 5.0 or PlusPerfect for the Portable Plus will include the driver and dictionary.

WORDPERFECT 5.1 ON THE PORTABLE PLUS

According to Sergio, the good news is that WordPerfect 5.1 runs on the Portable Plus using our WPRUN program from the PlusPerfect disk. The bad news is that the minimum configuration without speller or thesaurus takes over 900K. Also Sergio's 5.0 screen driver does not work on 5.1. Without the driver you can not use the new WordPerfect 5.1 equation feature.

PLUSPERFECT AND WORDPERFECT FOR THE PORTABLE PLUS

WordPerfect 5.0 for the Portable Plus can only be obtained through Personalized Software. It consists of: (1) the IBM PC WordPerfect package from WordPerfect Corporation, and (2) the Personalized Software, PlusPerfect package. PlusPerfect contains a WordPerfect keyboard template designed for the Portable Plus, instructions on how to

install and use WordPerfect on the Portable Plus, and a disk containing proprietary files that allow the IBM PC version of WordPerfect to work on the Portable Plus.

PlusPerfect may be purchased separately. However, you must honor the WordPerfect license agreement which states that you may only use WordPerfect on one machine at a time. (In other words you can not be using WordPerfect on the Portable Plus while your secretary is using the same copy on your PC).

The Portable Plus ROM version consists of 6 64K EPROMs. 4 of those EPROMs contain the main WP.EXE and PlusPerfect program. The other two ROMs are optional -- they contain help files, ThinkJet and DeskJet printer drivers, and several other useful files. Even with the ROMs installed, you need to have the 300K WP.FIL program on your Edisk for WordPerfect to run. In addition, WordPerfect requires 372K of Main Memory to run.

You need at least a 512K Portable Plus with 384K memory drawer (896K total) to run WordPerfect 5 comfortably on the Portable Plus. A 1 meg memory drawer is the best way to go.

If you have an 896K Portable Plus and do not have the ROMs, then you must first load the main WP.EXE file from the HP9114 disk drive. However, once loaded, you may disconnect the Plus from the HP9114. You can even shell out to DOS from WordPerfect and return. You never need the HP9114 again until you actually exit WordPerfect and need to reload it.

ORDERING INFORMATION

WordPerfect 4.2 retails for \$435 and is available to subscribers for \$339, if purchased through Personalized Software.

WordPerfect 5.0, with PlusPerfect retails for \$645 and is available to subscribers for \$395.

WordPerfect 5.0 and PlusPerfect, WITH ROM BACKUP retails for \$940 and is available to subscribers for \$595.

PlusPerfect retails for \$150 and is available to subscribers for \$129. ■

No Weltec Serial Hard Drive For Portable Plus

P+ We loaned a Portable Plus and a Technical Reference Manual to the Weltec people to see if they could get a their serial hard drive to work on the Portable Plus. Unfortunately, it turned out to be too difficult, so we are out of luck. ■

WorldPort FAX

P+ We sent the WorldPort people a Portable Plus and technical information to see if they can get the WorldPort Fax to work with the Plus. It will depend on how much time it will take to rewrite the software. I am not overly optimistic, but there is certainly a possibility. ■

2400 baud portable modem for your HP Portable

The 4"×2"×1" WorldPort 2400 costs less than HP's internal modems, is faster, and can be used with more than one computer.



Weighs only 6½ ounces!

If you do data communications with an HP Portable or Portable Plus, you've probably found the internal 300- or 1200-baud modem to be too slow. Until now, the only solution was to buy a bulky external modem and lug it around wherever you go.

A better solution is the Worldport 2400. It measures a trim 4"×2"×1", it's rugged, it weighs only 6½ ounces including the battery, and it sends and receives at 300, 1200, and 2400 baud.

A MYRIAD OF FEATURES

The WorldPort 2400 has a wealth of features you would expect to find in a desktop modem several times its size.

EXTRA BONUS FOR USERS OF THE IBM PC AND NEW HP PORTABLE VECTRA

Included with the WorldPort 2400 at no charge is the acclaimed communications and remote control software package, Carbon Copy PLUS (retail value: \$195). The program also comes free with the WorldPort1200—WorldPort2400 Upgrade Kit. (Carbon Copy PLUS will not run on the HP110 or Portable Plus, but both WorldPort modems will run with HP's communications software, namely the Terminal program for the HP110, and TERM and Reflection for the Portable Plus.)

For example, the WorldPort 2400 has auto-dial, auto-answer, and both pulse and tone operation. It comes with a standard modular phone plug for connecting with the telephone line. It offers non-volatile storage of up to 20 commands. And it is fully compatible with the industry-standard Hayes AT Command Set, and with the HP110's Terminal software and the Portable Plus's TERM and Reflection software.

Since a modular plug is not always available, the WorldPort 2400 also has a built-in interface for an acoustic coupler. (The coupler, an optional extra, runs at 300 and 1200 baud.) The unit is compatible with both the internationally accepted CCITT communications standards and the Bell communications standards recognized in the U.S.

The WorldPort 2400 uses a standard 9-volt transistor radio battery (it's included with the unit). A fresh battery will keep the WorldPort humming for 8-10 hours. You can extend battery life by operating the unit from a wall outlet whenever possible, using the optional AC adapter. The WorldPort 2400 draws no power from your Portable's battery.

DOUBLE GUARANTEE

In addition to our standard 60-day money-back guarantee, the

WorldPort 2400 comes with a 2-year manufacturer's warranty covering defects in materials and workmanship.

The WorldPort 2400 offers portability, reliability, well-designed features, and ease of use. Order yours, risk-free, today.

	Retail Price	Subscriber Price
WorldPort 2400 modem	\$359.00	\$319.00
WorldPort Modem 2400/MNP	\$499.00	\$425.00
WorldPort 1200 modem (without software)	\$199.00	\$179.00
Cable to connect modem to HP Portables	\$30.00	\$20.00
Acoustic coupler (300/1200 baud)	\$79.95	\$79.95
Upgrade kit: WorldPort1200—WorldPort2400 (includes Carbon Copy PLUS software)	\$199.00	\$179.00

60-DAY MONEY BACK GUARANTEE

See order form for details.

TO ORDER

Use enclosed postage-paid order form or send check or credit card information (#, ex. date, signature) to:
Personalized Software
PO Box 869, Fairfield, IA 52556-5151 72-6380

WorldPort 2400 and WorldPort 1200 are trademarks of Touchbase Systems, Inc. Hayes is a trademark of Hayes Microcomputer Products, Inc. Carbon Copy PLUS is a trademark of Meridian Technology, Inc.

Technical Reference Manual For Portable Plus Available Again

P+ The \$100 Portable Plus Technical Reference Manual was taken off the price list in September, 1989. HP kindly gave us permission to copy the manual. We will sell used or copied versions of the manual for \$49. ■

New Version of Squish Plus

By Richard Hall

P+ Sundog Software has released version 2.0 of Squish Plus for the Portable Plus. Squish Plus is the file compression program we reviewed in *The Portable Paper* (Vol.4, No.2, Pg. 6). The advantage Squish Plus has over other file compression programs is that it's invisible to the user. After you've installed Squish Plus, you simply save your files to, or retrieve them from your "Squish disk" and the compressing and uncompressing takes place automatically.

We liked the first version of Squish Plus, and with the improvements incorporated into the new version 2.0, we give it an even stronger recommendation for HP Portable users. Sundog has fixed a number of minor bugs in the new version. More important, they have added some features that make Squish Plus even easier to use.

NEW FEATURES

- Easily increase size of Squish Disk -- The "Squish disk" is the area of your electronic, floppy, or hard disk you set aside for file compression. With the earlier version of Squish Plus, once you created your Squish disk, you couldn't increase its size. So, if you ran out of room in your Squish disk and wanted to make it larger, you had to go through the complex process of backing up the contents of your Squish disk, deleting it, recreating a larger Squish disk, and restoring the backed-up files.

The new version allows you to increase the size of your Squish disk when you ATTACH it. If your Squish disk is getting too full, you can simply modify the ATTACH command to enlarge it.

- Quickly determine free drive letters -- Using the ATTACH command is easier with the new version. Instead

of guessing what the first free drive letter is, all you have to do is type:

ATTACH ?: to C:\S1\SQ.DSK

The ? after ATTACH tells Squish Plus to find the first available drive letter and attach it to the Squish disk described in the rest of the command line.

- Installing multiple Squish Disk drivers -- the older version of Squish Plus needed a device driver command line in the CONFIG.SYS file for each Squish disk defined. Each driver installed this way used about 36K of RAM so if you had two Squish disks installed, 72K of your Vectra's 640K of RAM or of your Portable Plus's Main Memory was occupied whenever you used your machine.

Squish Plus 2.0 lets you specify the number of Squish drive letters you want on a single device driver command line.

- New version works with Squish Disk created by older versions -- Squish disks created with older versions of Squish Plus will work with the new program, but don't mix any of the other files. For example, don't use the ATTACH program from one version with the SQPLUS.SYS program from another.

SQUISH PLUS AND THE PORTABLE PLUS

The most significant benefit to Squish Plus users is that the size of necessary files is smaller. The two required files: SQPLUS.SYS and ATTACH.EXE shrank from 16.9K to 14.3K and 35.6K to 28.2K respectively for a total savings of 10K. In addition, the MKDISK and INFO files shrank about 40%.

Sundog includes two versions of the SQPLUS.SYS driver file. One version allows users to create as many squish disks as desired and requires 39K of Main Memory and the other only allows one Squish disk and takes 37K of Main Memory.

The backup ROM version 2 contains all Squish Plus files including MINSIZ, which was left off of version 1 ROM due to lack of space, and both Squish Plus driver files. Since MINSIZ is not all that useful, it is probably not worth the effort for Squish Plus version 1 ROM owners to upgrade. The only reason a ROM owner would want to upgrade would be if it is important to be able to have 2 or more Squish drives available most of the time, or if variable Squish disk sizes are important.

ORDERING INFORMATION

Squish Plus, 2.0 for the Portable Plus retails for \$129 and is available to subscribers for \$99.95.

The ROM Backup Package (which includes Squish Plus 2.0 for the Plus and disk and two 64K Backup ROMs) retails for \$264 and is available to subscribers for \$234.95.

Squish Plus 2.0 on ROM (you must own Squish Plus, 2.0 for the Plus for each ROM set ordered) is available to subscribers for \$135.

CompuServe

Get started on CompuServe with CompuServe Starter Kit. Kit includes

- \$25 free time
- Complete hardcover Users Guide
- Permanent user ID number and preliminary password
- CompuServe's monthly magazine, Online Today.
- Regularly \$39.95 minus 10% Portable Paper discount.

Normally:
\$39.95

Subscriber
discount:
\$35.95

Squish Plus, 2.0 for the Portable Vectra (or any PC compatible) retails for \$99.95 and is available to subscribers for \$89.95.

UPGRADING

Personalized Computing now sells version 2.0. If you purchased the old version and want to upgrade, send \$25 and proof of purchase to Sundog Software. You will receive new software and documentation.

For a ROM upgrade you must first upgrade through Sundog. Then send Personalized Software proof of upgrade purchase and your two Squish Plus ROMs and \$35. We'll then put version 2 on those ROMs. ■

Volume Five Binder for Portable Paper

Those of you who purchased Vol 1-4 binders for *The Portable Paper* can get Vol 5 for an additional \$7. The whole set, volumes 1-5, now sells for \$29. ■

T/Master and T/Maker Discontinued

110 We are taking integrated packages of T/Master for the Portable Plus and T/Maker for the HP110 off our price list. **P+** We have a few copies of T/Master left in stock at the old price (see special sheet of sale prices included with this issue).

We have a number of Portable Plus customers who are real fans of this program which combines a spreadsheet, word processor, spell checker, data base, and communications in one memory efficient package. However, we decided to discontinue T/Master since the cost of the product recently doubled, we sold relatively few, and because it is difficult to keep up with and properly test the regular updates. ■

THE SAVVY USER

By Thomas Page

NETWORKING WITH THE PORTABLE PLUS

110 I recently received an inquiry about building a network of Portables. This request was on the right trail. Information exchange is what knowledge is all about, and computers are the most efficient tools developed for managing information.

P+ Networking the Portable Plus is quite easy. If your Plus is equipped with a modem and a terminal program, it's as easy as opening a CompuServe account. CompuServe's E-mail services are immediately available, fairly easy to use, and permit sharing data from locations all over the world. As far as I am concerned CompuServe is an essential computer component, but unfortunately it can get expensive. For many users, or groups of users, a private bulletin board may be cheaper and more efficient.

PV All that's needed to open a bulletin board is a dedicated telephone line (or one at least available most of the day), an IBM-PC/clone with a suitable host program, a 10MB or better hard disk, and the best modem you can afford to use as host. Somebody could upgrade to a 386SX or 386 and use his or her old PC for the job of host. You don't need a color monitor and the host doesn't need to be fast. Most any computer is faster than a modem link at 2400 baud.

LS 1/2 RBBS-PC is probably the most commonly used host program. It is used by businesses, government agencies, users groups, dating services, and hackers. This program provides the expected functions: bulletins, message system, conferences, and data transfer (ASCII and XMODEM). RBBS-PC is somewhat complicated, but it can be customized to become almost unrecognizable. For example, HP graphics characters can be substituted for the IBM graphics characters in the menus and menu options can be suppressed and security options can control the degree of access various classes of users are allowed. In addition, RBBS-PC will allow remote execution of DOS commands such as DIR, EDLIN, TYPE, PKZIP, and PKUNZIP. Access to DOS functions should be limited to the most trusted users. Allowing a terminal to access the Host's DOS is a powerful option, but you don't want everybody who calls mucking around on your hard disk.

Most any computer (HP or otherwise) can be used as a terminal for an ASCII host and transfer files using XMODEM. TermPlus (Personalized Software's communications program, available to subscribers for \$79.95) is an almost perfect terminal program. It's small, requires minimum disk space, loads fast, and requires little optimization. Its operation is straight forward and it does just about anything a terminal should do including XMODEM

file transfers.

My terminal program is Reflection. I like its macro (command file) capability. Learning Reflection takes some effort but it is rewarding. Although I have heard that it is good, I have never used Reflection's proprietary file transfer protocol. RBBS-PC permits additional file transfer protocols to be implemented with add-ins. The Reflection protocol could probably be fairly easily implemented if the proper code could be made available to the right person. Maybe someone has already done it.

Running Lotus 123 remotely from a Portable Plus should be possible, but I haven't tried it. Since 123's menus won't be accessible, the 123 spreadsheet must be designed to operate in batch mode. Here are the basic steps to making it work (using RBBS-PC as the host program):

- Use 123 on your terminal computer to prepare data file to drive the host 123 spreadsheet;
- Load the terminal program and call RBBS-PC host,
 - OPTION: Compress data file with PKZIP;
- Use Xmodem to transfer 123 data file to host;
- Use RBBS-PC windows option or SYSOP commands to exit to host's DOS,
 - OPTION: If necessary UNZIP 123 data file;
- Be sure proper host worksheet is named AUTO123.-WK1;
- Execute 123. 123 will load AUTO123.WK1. The auto-execute macro performs the following tasks: Loads data file(s); Recomputes spreadsheet; Creates output data file(s); Saves spreadsheet if desirable; Exits 123.
 - OPTION: Compress output data files.
- Exit host's DOS to return to RBBS-PC;
- Download 123 output files;
- Log off host and exit terminal.

I guess the "Challenge of the month" award would go to making this idea work. The prize? If you do it and write about it, Hal will publish your article.

Has anyone discovered a faster Portable modem than the WorldPort 2400?

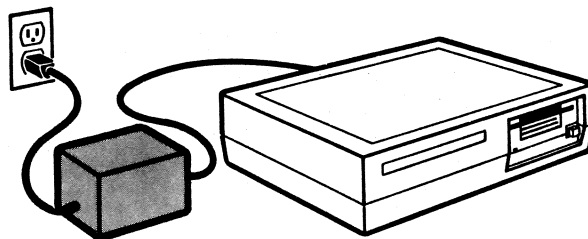
How about equipping the WorldPort modem with a Portable-compatible 9-pin modem connector? A small plastic block could be glued to the outboard end of WorldPort to support the box. You could mount the plug on the battery compartment cover or in front of battery compartment.

SERIAL CABLES AND YOUR PORTABLE

110 I don't remember if I have written about serial cables for the Portables or not -- I know that I have thought about doing it. The letter from J. Pechac in the Jan/Feb 1990 issue indicates that even if I have, it's time to do it again. The following cables and gadgets are sufficient to connect a Portable to most any other serial device (i.e. other computers, modems, and printers):

- One HP 92221M Modem cable (HP 9-pin male/25-pin male);
- One 25 pin null modem device (male/female);
- One 25 pin gender mender (female each end);
- One AT modem cable (IBM-AT 9-pin female/25-pin male).

THE HP9114 EMPOWERER



If you've been frustrated trying to use your HP9114 external disk drive only to have the battery quit before you've finished your work, then you know the problem. Now you need the solution.

THE PROBLEM:

The charge on your HP9114 battery doesn't last long enough for you to do all you'd like to. For that matter, in some cases it doesn't last long enough to do *half* of what you'd like to.

According to Hewlett-Packard, you get up to 40 minutes of continuous usage before the battery dies. We've never gotten more than 20. Just formatting disks, transferring files, or running disk-intensive software and getting it to work can be a major triumph.

How many times have you wished you had a second external disk drive?

The Portable Equipment Exchange, a division of Personalized Software, is selling HP9114A units including power supply at a substantial discount. See enclosed four-page brochure for details.

Plugging in the HP9114 doesn't help, either. That only recharges the battery—it doesn't let you keep working.

WE HAVE THE SOLUTION:

The official HP suggestion is to buy another battery pack and keep both plugged in. When one loses power, replace it with the other. This seems clumsy to us. What if you want to do several hours of disk intensive work? At **Personalized Software** we have a better solution—the HP9114 Empowerer.

The Empowerer is special power supply that will allow your HP9114 disk drive to run forever. Just remove the battery pack,

and plug The Empowerer into the open slot and into your wall outlet. It's that easy!

To run your HP9114 to your heart's content, order your HP9114 Empowerer today.

HP9114 Empowerer \$99.95
\$89.95 for Portable Paper subscribers.

PRODUCT NO. PR12NM

60-DAY MONEY BACK GUARANTEE

See order form for details.

TO ORDER

Use enclosed postage-paid order form or send check or credit card information (#, exp. date, signature) to:
Personalized Software
P.O. Box 869, Fairfield, IA 52556 515 472-6330

RECOMMENDED FOR:	
HP110 Portable	•
Portable Plus	•
Portable Vectra	
HP150	
IBM PC and compat.	

Serial devices are classified as either data terminal equipment (DTE) or data communications equipment (DCE). Printers and computers are data terminal equipment. Modems are data communications equipment. When a modem is connected to a computer a straight-through cable is used because the positions of the transmit and receive pins on serial ports are reversed between DTE and DCE. The transmit pin on a computer's serial port must connect with the receive pin on the modem and vice versa. When connecting a computer to a printer, a cable with crossed wires must be used since the transmit and receive pins on both ports are in the same position. A null-modem device is simply two back-to-back cable plugs wired together to reverse the transmit and receive leads. They cost, depending on the source, from \$5.00 to \$15.00 and if there is any difference, it may be that the more expensive ones are better shielded (Radio Shack offers a null-modem adapter for \$7.95).

A gender mender, like a null modem, is two back-to-back cable plugs wired together, except that it is wired 'straight through' without reversing any leads. Also the plugs of a gender mender must be of the same sex, either both female or both male. Null modems on the other hand normally have both male and female plugs so as to not change gender, but some manufacturers make gender-changing null modems. A female/female gender-changing null modem could be substituted for the null modem and

gender mender and work just fine with one less component in many situations. The two separate devices are more flexible and work with even more different devices. If you bought a set of cables with Duette--the long middle cable is a null modem cable and if you are using the dippy little Duette HP to AT serial port adapter, replace it and one of the short AT modem cables with your HP 92221M cable.

At my office I use a Toshiba T3100 as a disk drive for my Portable Plus. HP Duette and the cables and devices listed are used to connect the two machines. When I am in the office I add about 25 feet of ordinary modem cable to the setup to allow placing the Plus on my desk and the T3100 on the table behind me.

XMODEM file transfer at 19200 baud is about as fast as the 9114 disk drive and can easily be done using the same cables and gadgets. I have tried it using Crosstalk on the T3100 and TermPlus, as well as Reflection, on my Plus. Procomm, or any of a number of terminal programs, could be used instead of Crosstalk. I like Crosstalk and although my experience with PC terminal programs is limited, I have met a few I do not like.

I have a friend who has worked with computers for 20 years. She thinks modern computers are boring because they don't have enough blinking lights. She would be happy with a panel that blinked randomly. Without lights, how do you show visiting firemen and potentates that your

computer is working. If you agree with my friend, hang a few blinking lights on your Portable's serial port by adding a serial port tester to your cable kit. It will be more useful as a teaching aid than a diagnostic tool. You should try it.

AT&T LONG DISTANCE SYSTEM CRASH

Can you believe it -- AT&T crashed! The mightiest utility in the world temporarily forced to give half of its customers a busy signal. A computer software glitch in a New York switching system cascaded throughout the nation, tying up circuits and reducing service for some customers to the "third-world" level.

Those of us living in Houston are becoming accustomed to dealing with utility problems. Just before Christmas cold weather disabled a number of the local electric utility's power plants. Unable to meet record demands for heat, the power company initiated a 'rolling blackout' to limit demand and avoid triggering a failure in the power grid that could have turned off the lights all over Texas. At various times during the day power to different sections of the city was turned off to reduce power consumption.

Obviously, the integrity of the telephone network is important, even if we don't communicate with computers. But if we do use telephones to transfer data between computers, it becomes even more critical. These outages remind us that even the most trusted systems sometimes fail and that we should be prepared to deal with these failures.

Actually Portable users are among the better prepared. An amazing amount of work can be done with a fully charged Portable without plugging into AC power. I cannot imagine having a terminal not designed to provide some minimum local services when its host is down. Neither can I imagine networked PCs being so dependent on the network that they are unable to perform most work if the network is down. In other words, I think both data and programs should be stored at the lowest level. Sure, it's impossible to keep everything on a PC, even a desktop with a big hard disk. The idea is to keep enough information on the PC to remain functional.

There will be significant after-the-fact analysis of the AT&T long distance telephone network outage and even the failure of the electric and water utilities in Houston. I would like to write a complete essay on these problems, but my primary purpose is to remind you that 'stuff happens' and 'stuff' can happen to you and your computer. Whether you like it or not, and in spite what your corporate Management Information Systems people have said, you have a first-line responsibility for protecting your computer and your data. After all, you will be the person most inconvenienced by a failure. The exact occurrence of many events cannot be predicted, but just like cold weather, computer system crashes can be anticipated and defenses developed. An important defense is knowing how to restart your computer and install its software. ROM disks are a big help, but we all need to be able to restore those programs we keep on our E-disk and floppy disks.

[The glitch in AT&T's long-distance routing computer created havoc across the U.S., making it difficult to use MODEM's and FAX machines via AT&T long-distance lines. If you are in an area serviced by MCI or US Sprint, it is possible to bypass AT&T long-distance lines and access

Also works on the
HP150.

FilePlus: The Portable Plus file manager. Fast, sophisticated, easy-to-use!

- List files in two directories simultaneously
- Copy, move, and delete multiple files
- Sort directories
- Create protected ("Read-Only") files
- Back up only those files that have changed since last backup
- And much more!

When Hewlett-Packard introduced the P.A.M. file manager in 1983, the program was ahead of its time. With P.A.M., users could copy, rename, and delete files by pressing function keys instead of having to enter DOS commands.

Today, however, users are more sophisticated—and so are the file management programs that have come on the IBM PC market. These programs go way beyond P.A.M. in their abilities and in the convenience they offer the user.

Most of these file managers won't run on the Portable Plus, but we've developed one that does. It's called **FilePlus**, and here are its benefits:

1. Display two directories

This is a feature that even some of the most popular IBM compatible file management programs don't have! FilePlus lets you list two directories (from the same or different disks) simultaneously on screen. This makes it especially easy to move files back and forth between the two directories.

2. "Point and Shoot"

You don't have to wade through P.A.M.'s function key menus to perform a simple operation like copying a file.

Instead, you simply display the contents of the source and destination directories side-by-side, tag the file you want to copy, then use a simple Lotus-like menu to enter the "Copy" command with a single keystroke.

You use the same "Point and Shoot" method to run programs and to move, delete, view, etc. any files you wish.

3. Tag multiple files

You can tag any number of files in a directory, then perform the same action (copy, rename, delete, protect, etc.) on all of them in a single step.

4. Sort files

FilePlus can list the files in a directory by name, extension, size, or date. (An alphabetical listing by name helps you locate files in a hurry. A listing by size is useful in determining which files to erase in order to free up any needed amount of disk space.)

5. Single-step "Move" command

To move a file from one directory to another, you no longer have to copy the file first then delete the original. FilePlus lets you do it with a single "Move" command—and you enter the command with one keystroke!

6. Protect your files

You can protect your files (make them "Read-Only") to guard against accidental deletion. FilePlus even lets you do this with entire directories! You can unprotect the files whenever you wish.

7. Show attributes (Read-Only, Hidden, Archive)

FilePlus displays the attributes of all the files in a directory so you can view them at a glance or change them in a flash.

8. Backup only if changed

FilePlus allows you back up just those files that have been changed since the last backup.

FilePlus will save you time and effort, boost your productivity, and increase your enjoyment of your Portable Plus. Once you try FilePlus, you won't want to be without it.

Order FilePlus at our risk today!

FilePlus.....\$69.95

Portable Paper Subscriber's Price.....\$59.95

ORDER NO. FE11NS

60-DAY MONEY BACK GUARANTEE
See order form for details.

TO ORDER

Use enclosed postage-paid order form or send check or credit card information (i.e., exp. date, signature) to:
Personalized Software
P.O. Box 889, Fairfield, IA 52504-515 472-6830

RECOMMENDED FOR:	
HP110 Portable	Portable Vectra
Portable Plus	HP150
IBM PC and compatibles	

MCI or Sprint, even if you don't normally subscribe to those services. You can dial either service's access code and then place your long-distance call. For MCI, dial 10222, then 1, and then the area code and telephone number you want. For SPRINT dial 10333, 1, area code and phone number. You will be charged the same rate as the network's regular customers and will be billed through your local telephone company. We're not sure if this can be done with other alternate long-distance services -- Editor.]

GETTING TOO MUCH HELP

110 **P+** **PV** **LS/12** Most modern computer programs include many convenience features to reduce the need for the user to type. These features can sometimes get you into trouble. A few days ago I made a round through the office to see what each of my associates was working on. One fellow was somewhat dejectedly rekeying data he had previously entered into a 123 spreadsheet. Seems he had used this spreadsheet as a base to start a similar new spreadsheet. Unfortunately, he forgot to give the spreadsheet a new name when he saved it, thus writing over his old spreadsheet. Fortunately, being an old computer hand, he had archived the file and copied it to another disk three or four months ago, so all he had to redo was a few months of data. His backup procedure was not adequate. He should back up after each update. The purpose of this story is not to tell you to backup but to suggest that more thoughtful procedures can reduce costly errors. A very simple but effective procedure would have saved my friend an hour or so of time rekeying data. If he had used DOS to copy the old spreadsheet file to another file, and then called this new file into 123, he would not have overwritten his data.

BACKING UP A SQUISH DISK

P+ **PV** **LS/12** Although I like the program, I don't normally use a Squish disk on my Portable. (For more information on Squish Plus see ad on page 7 or article in this issue, page 29.) Too often I'll want to load a very large spreadsheet and need the RAM memory lost to the Squish device driver. But I do keep the RBBS-BC bulletin board program on my T3100 stored on a Squish disk. This allows me to quickly remove the application if I should need more hard disk space.

When I need the space, I simply copy the Squish disk file on a standard 3.5" floppy disk and then delete it from the hard disk. This frees up almost 3/4 MB of hard disk space. Of course I had to create the Squish disk file small enough to fit on the floppy.

When I get ready to reinstall the bulletin board, I just copy the Squish disk file from the floppy to the T3100's hard disk. A similar procedure could be used to back up a Portable's Squish disk. Make the disk small enough to fit a floppy. Backing up and restoring becomes as simple as the DOS copy command. You will have to do a little experimenting to make the largest Squish disk that can still be stored on a floppy. I have done it but I don't remember the parameters.

APOLOGY

In my last column I promised to upload to the HP Forum some batch files compiled with Wenham Software's Batcom

batch file compiler. I hope some of you looked for the files I listed, but I am sorry that you did not find them. The programs are not vaporware. I am using them on my Plus every day. Unfortunately, I never found time to finish the documentation. I promise to get it done soon.

FUTURE PORTABLE

110 **P+** **PV** **LS/12** I second David Hughes' suggestion to write HP and let them know what we want in a Portable computer. Most of us who have used the HP Portables are not satisfied with the current crop of portable computers. We are spoiled because HP got so much of the portable concept right in the original Portable. It has not been uncommon for HP, being an engineering design-based company rather than a marketing company, to get it right and then be forced by the market to switch to an inferior concept. Several years ago HP built pocket calculators with the operator keys (enter, plus, minus, multiply, divide) on the wrong side of the key pad. That is, they were placed on the left side and easily accessible to the strong forefinger of the right hand instead of on the more traditional right side where they are placed on office machines. Perhaps a lefty designed HP's newer calculators. I suspect a marketing survey found most potential users expect operator keys on the right. Anyone who has used the older keypads can tell you that wrong is right or that right is wrong.

Let's take a look at the HP110 and Portable Plus and see what is right and what can be improved without making it wrong. Be careful messing with the keyboard. There are a limited number of keys that can be laid out in any given space. The Portable keyboard may not be full size, but it is big enough. Its keys may not move as far as those on many larger keyboards, but they are sufficiently tactile. The movement is sufficient, and it is audible without being extremely noisy. I am not fond of F-KEY templates (function key templates like those used in Lotus 123 and WordPerfect), but the Portables' method of attaching F-KEY templates is the best I have seen on any computer. SHIFT, TAB, BACKSPACE, and RETURN keys are sufficiently large. The ESC and CONTRAST keys are well placed. The CONTRAST key is a much better screen adjustment device than I have seen on any other portable computer. HP has cursor keys working correctly too. Make the SELECT key the END key, but keep the END HOME function on [EXTEND CHAR] [LEFT CURSOR]. It is more efficient than the F-N key used on several current portables and the keys are reached by a strong up reach rather than a down crunch movement. I sometimes work with an associate who uses a Compaq portable. The movements he uses to access certain cursor functions, particularly the 123 END key, requiring the F-N key, look rather clumsy. I realize the technique is not much different to using the EXTEND CHAR key but it does not appear as smooth, and with the select key substituting for the much-used 123 END key, the HP keyboard seems far superior.

I like the MENU and USER/SYSTEM keys, but to be a bit more compatible we need 10 FUNCTION keys. And if required to be more compatible, there is room within the confines of the existing keyboard layout for as many as six more keys. Eliminating or moving the cover locking device will immediately free space for two keys. I can easily live with a shorter space bar. This will produce two easy keys, one at either end of the spacebar, and further shortening

At last! EASY TO USE COMMUNICATIONS SOFTWARE

for the HP110 and Portable Plus

HP110 users: Tired of struggling with the built-in Terminal program?

Portable Plus users: Is PC2622 or Reflection too complex for your needs?

In either case we have good news: two of the easiest-to-use communications programs we've ever seen.

Term110 was developed by Cliff Looyenga, who writes the "Wizardry" column for The Portable Paper. It runs on the HP110.

TermPlus was developed by Portable Paper contributor David Hughes from an earlier

prototype. It runs on the Portable Plus.

Both programs allow you to:

- Send and capture ASCII information;
- Quickly send programs, Lotus worksheets, and archive files via the XMODEM protocol;
- Log onto electronic bulletin boards and remote computers automatically;
- Store and access directories of phone numbers;
- Run other programs without severing the phone connection.

Both programs have on-line help, and use around 25K of electronic disk space.

Most importantly, both programs make efficient, logical use of function keys and menus to make the job of transferring files and programs *easy*.

You won't appreciate *how* easy until you try Term110 or TermPlus for yourself. We invite you to do so today at our risk.

Term110 (for HP110) or
TermPlus (for Portable Plus).....\$99.95
(Specify which program when you order)
Portable Paper subscriber price.....\$79.95

RECOMMENDED FOR:		Term110	TermPlus
HP110 Portable		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Portable Plus		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Portable Vectra		<input type="checkbox"/>	<input type="checkbox"/>
HP150		<input type="checkbox"/>	<input type="checkbox"/>
IBM PC and compat.		<input type="checkbox"/>	<input type="checkbox"/>
Available on ROM Backup for the Portable Plus*		<input type="checkbox"/>	<input type="checkbox"/>

*ROM backup of TermPlus includes IBM disk formatting utility, ThinkJet control pop-up, and more.

60-DAY MONEY BACK GUARANTEE
See order form for details.

TO ORDER

Use enclosed postage-paid order form or send check or credit card information (/, exp. date, signature) to:
Personalized Software
P.O. Box 869, Fairfield, IA 52556 515-472-6380

may yield two more keys without damaging the functionality of the spacebar. I think, if given the choice, I would add two one and one half sized keys.

The Portable's size is about right, but it could lose some weight (4 pounds is a good goal) and become slimmer. Knocking 1/2 inch off its thickness would make carrying easier. Don't bother to add a carrying handle. The original Portable was designed to be carried like a book. The concept is even more valid with a lighter and thinner machine. I would much rather use space a handle would occupy to hold RAM or ROM.

I am not in favor of docking ports. The HP-IL loop demonstrates a desktop network concept far more flexible and useful. Although I use my Portable as a primary computer, the concept of a portable as an addition to, rather than a replacement of a desk top computer, is valid. Replace the HP-IL with a high speed optical fiber and use this to connect to other computer devices. Fiber optic cables have been developed for connecting stereo components. Surely this consumer technology can be adapted for computers. Since I am not fond of keyboards larger than my computer, I would just as soon use my Portable as the keyboard for my office computer. This should not be difficult with an optical fiber connection. Docking ports stack more junk on the desktop. A cabled network will move accessories off the desk top.

I am glad my Portable has a serial port, but I think I could be just about as happy with a serial port on the HP-IL. HP made adapters to connect the HP-IL to serial and parallel devices. At \$250 to \$300 each they probably were not really overpriced, but were beyond the purchase threshold of most buyers. It would have been better to put one of each in the bag with the HP-IL cables. At least more people would have been aware of the Portable's ability to connect to 'standard' devices. For a new high-speed desktop interface to be accepted, it must include at a reasonable cost, and include adapters to invisibly connect it to current standard serial and parallel devices - modems, printers, other computers, and disk drives. Building a

number of devices to connect directly to the desktop interface is essential. Let's use this hot new interface to connect high-speed devices such as disk drives, CD-ROMs, and other computers.

An external disk drive modeled after the 9114 is an essential requirement for a portable computer. I will accept a box the same size as the 9114 if enough goodies are put inside. Options include: the obvious floppy disk, a hard disk, CD-ROM, a super modem, network interfaces, more memory, and even a more powerful computer. An argument could be made to size this device so that the computer will sit on it. That is, make it the same width and length as the computer keyboard unit. This may be acceptable. I don't think I would often want my keyboard sitting on this extra thickness and would enjoy a smaller footprint unit sized to fit under the smallest possible 8.5 inch printer.

The cables and plugs used with current portables exceed disk drives in unportability. Reducing the conglomeration of connectors on the back of a portable to an RJ-11 (telephone) jack and a one-plug fiber optic connector (simpler than HP-IL with two plugs) would be a significant improvement.

In the dark ages of personal computing I shared two HP-125 computers with the dozen people in my office. You may not think 26K Visacalc spreadsheet on a 64K CPM machine is computing, but it beats a calculator, and you can be much smarter than someone who doesn't have any computer. These computers utilized the HP-IB interface to connect disk drives, plotters, and printers. HP-IB is much too bulky for portable use, but the way that it interconnects is very flexible. Unlike HP-IL, it does not have to be connected in a serial loop. Plugs stack to allow connecting all devices at a single point, or wiring can be chained from device to device. A desktop network should permit stacked and chained configurations. It will make connecting peripherals easier.

I like the Portable's RAM/ROM concept because it is rugged and energy-efficient, but there are many people

who will not settle for a machine that does not include built-in disk drives. Drawers similar to the Plus's memory and software drawers could accommodate these people. If the thickness and weight of a Portable is reduced sufficiently, standard RAM/ROM drawers could be replaced with slightly larger drawers containing fixed and removable disk drives. A 3.5 inch disk fits just perfectly in a shirt pocket. I am not convinced a smaller disk is an improvement. I am not going to scream, "Standard." If no one ever used a smaller non standard floppy disk we would still be using 64k, 8 inch disks.

As I stated previously, the Portable is the only PC, portable or desktop having an efficient method for attaching F-KEY templates, but why should we have F-KEY templates at all? Many Portable programs show how efficient 'on screen' F-KEY templates are. You never have to worry about one falling off the keyboard, and they flexibly change from program to program and within many programs. Ideally, each programmable key should have an LCD built into its top to show its current function. This may be dreaming, but a separate LCD display above or below the f-keys could be used as an electronic f-key template. Or the normal display could be extended two lines to accommodate these templates.

Many of today's programs achieve flexibility by using driver files to interface the program with the computer and its peripherals. I would hope that a new portable computer system could be developed to allow the user to globally configure his computer system for all programs. This is much more efficient than configuring each program. It should be faster in that each program should have to only load a minimum of configuration and customization data and it should be disk efficient in that it would reduce the size and number of driver and configuration files, as well as make the computer easier to use.

FUTURE COMPUTER AND TV'S

If you want to see the computer of the future look at your television set. I don't know if computers will turn into televisions or if televisions will turn into computers. Just expect the two devices to merge. Programs will replace specialized circuitry for signal processing. Compact disks have made sound a digital medium, in premium TV sets video signal processing is controlled by digital circuits, and the audio component of many satellite TV relays is digital. High Definition Television (HDTV) may make a brief appearance. However its resolution is not satisfactory for many imaging jobs-viewing medical X-rays for example. Anyway HDTV is not a display standard. It is an analog broadcast standard. Certainly it takes a lot of data to produce video pictures, but faster CPUs, cheaper memory, cheaper data storage, and more effective data compression techniques will combine to make video a digital medium.

VCRs are among the most difficult-to-program devices. It would be much simpler to write a program with an editor and download this to the VCR. Adding a computer to control a sophisticated home entertainment system makes a lot of sense. Just think about the game playing possibilities. It makes Nintendo look like kid stuff. Actually, control can go much further than home entertainment systems. It can extend to total environment control. More and more homes are being equipped with smart thermostats. I have one that can remember 4 different heat and air conditioning settings for different times of day for the normal Monday through Friday week and, in addition, allows separate programs for Saturday and Sunday. But environmental control goes even further. I visited a light

Charge your Portable (and HP9114 and ThinkJet) off your car's cigarette lighter!

It's the Mobile Ni-Cad Recharger (MNR-2) from S.O.S., and it couldn't be easier to use: simply plug one end into your car's cigarette lighter and the other into your Portable, Portable Plus, HP9114, or ThinkJet.*

The time it takes to charge a given unit is about 30% longer than with a wall charger. Your car does not have to be running—the unit can operate overnight with no danger of running down a normal car battery.

Mobile Recharger\$69.95
Portable Paper subscriber price.....\$59.95
PRODUCT NO. PR11NM

* Also works with HP41C/CV/CX, HP71B, and HP75C/D hand-helds; HP82143 and HP82162 printer/plotters; HP82161 cassette drive; and rechargeable reserve battery packs for all these devices.

© Copyright 1989 Personalized Software

fixture store and looked at a catalog that described a four-channel (four-circuit) infrared remote controlled light control panel. It included memory to store four scenes (dimmer settings) and could be programmed to change scenes at various times. I don't remember its complete capabilities, but it is certainly a big step from plugging a lamp into a timer to scare burglars away.

Only \$70 will get you a programmable remote control unit that can be used to replace the multiple remote controls that come with the new devices you add to your home entertainment system. These are nifty gadgets, but they are a little difficult to program, and they can't completely replace the original remote controls. The originals are needed to program the programmable remote. A good programmable remote control will permit programming sequences of commands to perform sophisticated functions such as turning on the TV, turning on the VCR, setting the TV to display the VCR's picture, select VCR as the sound source, and start a tape. Attempting to program sequences will soon reveal a weakness of current remote control systems. There is no feedback from the controlled devices. Power off commands may be sent when a device should be left on, since the status of the controlled device cannot be determined by the remote controller. The ability to query device status and get replies is essential to any really effective control system.

A computer desktop link as I have described could very easily be a part of a home control network. It could simplify connecting components as well as providing control links. Wouldn't it be nice to check the temperature and the thermostat settings from the comfort of a warm bed. The technology is just around the corner. Just as the term "rock and roll" was coined to describe the music that resulted from the amalgamation of jazz, country, folk, and gospel, it may be necessary to coin a new term to describe this amalgamation of computer and television electronics. To be consistent with the term "workstation" we could call it a "playstation." It would serve the originator of the term workstation right. Especially when it is used to do work. But whatever we call it, it will be pointless to argue whether it is a television or a computer. ■

[Tom works for a natural gas pipeline company in Houston, Texas and was one of the first to use PC's in the natural gas industry. His excellent contributions to The Portable Paper have proved beyond a shadow of a doubt that he is truly "The Savvy User."]

(110%, continued from page 14.)

"I was thinking about buying a portable computer and a friend of mine told me about his HP Portable. I checked around and agreed it was the best, so I bought it. Ever since then it's money, money, money."

Once a philosophy major at California State University at Long Beach, Steve became a household name in the early '70s. Since then he has recorded a gag song ("King Tut") which sold more than a million copies; published a book of short stories (*Cruel Shoes*) that was No. 1 on the best-seller list; and starred in several successful movies, including a remake of *Cyrano de Bergerac*, *Roxanne*, which he wrote.

In *Roxanne*, Steve plays a smart, likable fire chief with a nose about as long as a hook-and-ladder truck. An HP Portable Plus plays a supporting role.

"I wanted the character to have a life at home," Steve explains. "Originally in the script, he wrote some articles for the *Times* of London. But that didn't make any sense, so we cut that out of the picture."

"I wanted him to have a computer lying around with a bunch of scholarly books, so I brought my Portable Plus for the movie. Actually, I use the Plus all the time. I used to go home at night and rewrite scripts, then bring in the Plus to the set the next day to use during those long periods in between shooting."

Steve says he uses one of his HP Vectras in his Beverly Hills, California, home to maintain his daily calendar. "The first thing I do in the morning when I get up is to check the computer and see what I'm supposed to be doing that day." He also uses the Vectra to write letters and screenplays.

"One of my latest projects is *L.A. Story*, a screenplay I wrote. In fact, I wrote it entirely on HP equipment."

Although Steve says he's "strictly an amateur" when it comes to computers, Ron Herman, owner and president of Blue Chip Computer Systems in Los Angeles says the silver-haired comedian is extremely knowledgeable about HP hardware and software.

"Steve comes in to Blue Chip about a half-dozen times a year and hides in a corner so no one sees him," Ron chuckles. "He's cordial, but very quiet. Three years ago, Steve knew nothing about computers, but we've turned him into a little hack -- a real computer head."

Why the fascination with computers?

"They're very self-contained worlds of problem-solving," Steve says. "If I wasn't using the Vectra for writing, I'd probably still have a computer and play Pac Man or something."

"It's like music," says Steve, an accomplished banjo player. "There are endless things you can think of to do with a computer. I'll spend hundreds of hours trying to figure out how I can save a nanosecond. But obsessed? No!" ■

Simple Backup Procedure For HP110 and Portable Plus

Most HP110 users and many Portable Plus users do not use subdirectories on their electronic disk. That makes it very easy for them to back up their HP Portable frequently,

ideally after each session. Here is a simple procedure.

From MemoMaker or The Editor get file PAM.MNU from your A (electronic) drive. If the file doesn't exist, create it. Add the following two lines to the file:

Backup Files!
copy *.* c:

When you return to PAM you'll see a new box labeled "Backup Files!". Connect the HP9114 to the Portable and start the "Backup Files!" application. All files on your A disk will get copied to the disk in the HP9114. ■

SmallTalk On the Portable Plus

Dr. Michael Green of the University of Minnesota called me to tell me of his success in getting programming object-oriented language SmallTalk to work on the Portable Plus. Michael got it to work by customizing drivers for the Portable Plus. He is working on a system for medical personnel making use of the Portable Plus screen graphics capability.

If you are interested, you can contact Michael via electronic mail. His CompuServe ID number is **72167,1266**; his Bitnet, Internet ID number is: **green@hcs1.labmed.umn.edu**. ■

Vectra 486 -- More Powerful Than a Mainframe

According to PC Week's test, HP's new Vectra 486 outperformed IBM's 4381 Model 1 mainframe in number-crunching and Compaq's Systempro as a LAN server.

The Vectra 486 tested sported a 25MHz 486 processor, 12MB or RAM, and a 670MB Enhanced Small-Device Interface (ESDI) hard disk. PC Week thinks a Vectra 486 with a couple of 50MHz 486 processors (under development by Intel) would approach the performance capabilities of an IBM 3090. The Vectra described here will list at \$25,989. ■

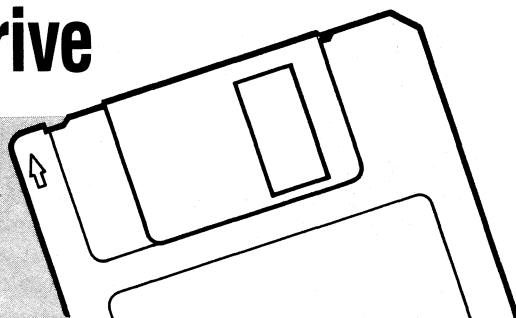
Non-Volatile RAM Disks For PC Compatibles

For those HP110 and Portable Plus users who understand the value of non-volatile RAM (fast, less susceptible to physical damage) you might be interested in NOVO DRIVE 8000, by Kapak Design of Saratoga, California.

NOVO DRIVE is a RAM disk emulator with one to eight megabytes of plug-in storage, upgradable by the user. Data is effectively non-volatile. An AC power adapter, separate from the computer, maintains data when the computer is off. In case of AC power failure, on-board batteries supply power for at least four hours.

Now you can use HP Portable or HP150 disks (single or double sided) in a 3½" IBM compatible disk drive

**Volume
Pricing
Available**



Even though your HP Portable/HP150 and the new IBM compatible computers both use 3½" disks, the disks are incompatible—HP disks can't be used in IBM machines.

ReadHP, a "device driver" program developed by Personalized Software, solves the problem.

ReadHP installs in an IBM PC or compatible in minutes, and is a cinch to use: You simply place a 3½" HP disk (single or double sided) in the PC's disk drive, and press a few keys. Voila! The PC can read and write to the disk directly—without losing the ability to read and write to IBM disks.

Want to share your WordPerfect, Lotus, or other files between your HP Portable/HP150 and an IBM compatible with a 3½" disk drive? It's simple: Order ReadHP today.

ReadHP \$79.95

Portable Paper subscriber price \$69.95

PRODUCT NO. RD11NS

60-DAY MONEY BACK GUARANTEE
See order form for details.

TO ORDER

Use enclosed postage-paid order form
or send check or credit card information
(#, exp. date, signature) to:
Personalized Software
P.O. Box 800, Fairfield, IA 52556 515-472-6330

RECOMMENDED FOR:

HP110 Portable	●
Portable Plus	●
Portable Vectra	●
HP150	●
IBM PC and compat.	●

ORDERING INFORMATION

NOVO DRIVE 8999 was developed by KAPAK Design, 12280 Saratoga-Sunnyvale Road, Saratoga, California 95070. Phone: (408) 253-5000.

The base retail price without memory modules is \$375. As of February 15, 1990, memory modules cost \$165 per MB through KAPAK (you may be able to get them for less elsewhere).

SUBSCRIBERS CAN SPECIAL ORDER the NOVO DRIVE without memory modules through Personalized Software for \$335 and memory modules for \$150 per MB. Please call us at 515-472-6330, or FAX us at 515-472-1879. ■

Acoustic Modem Adapter

110 The MA-100 is an acoustic adapter designed to allow modem use with a personal and laptop computer where direct telephone access through a modular jack is not available. The MA-100 folds up small enough to fit in your hand or pocket and weighs 6 oz. When in use, it can be adjusted to accommodate virtually all types of telephone handsets, including European styles.

P+ The MA-100 connects to your computer's internal modem, or to an external modem via a standard RJ-11C jack. The telephone handset attaches to the MA-100, which allows data communications at all rates from 0 to 2400 bps. The MA-100 is compatible with all standard direct connect modems regularly used in the U.S. and Europe including Bell model 103, 212, and CCITT V.21, V.22, and V.22BIS. Power to the unit is provided by one 6 volt, J-type battery. The battery life is approximately 40 hours.

PV The MA-100's performance is limited by the characteris-

tics of the telephone instrument, modem, and phone line. The probability for errors or lack of handshaking increases with an increased data transmission rate, distance of transfer, and ambient line noise.

ORDERING INFORMATION

The MA-100 Acoustic Modem Adapter was developed by Information Machines, Inc. of Woodland Hills, California. A 1200 bps unit is now available and retails for \$129. A 2400 bps unit was supposed to be available in February, 1990 and will retail for \$159.

SUBSCRIBERS CAN SPECIAL ORDER the Acoustic Modem Adapter through Personalized Software for \$. Please call us at 515-472-6330, or FAX us at 515-472-1879. ■

Battery Technology Advances with Aerobic Power

By Richard Hall

110 "Aerobic Power" may conjure up images of Jane Fonda in tights to some people, but in this case it's the name of a lightweight, zinc-alloy battery that can provide laptop computers with up to 20 hours of run-time, according to the developers of the battery, Dreisbach ElectroMotive, of Santa Barbara, California.

P+ Aerobic Power draws oxygen through a cathode membrane instead of a bulky oxidizer chamber used by many conventional batteries.

PV Only preproduction samples are available at this time and prices have not yet been determined. It will be interesting to see what effect this development has on laptops in the near future. ■

Speed up your Portable Plus

At least 60% faster with our low-cost 'FastPlus' upgrade!

By installing a faster processor and increasing the clock speed of your Portable Plus, you can run Lotus 1-2-3 and other applications at least 60% faster than before.

The upgrade is straightforward, but requires skill and experience working inside a Portable Plus.

If you want to try it yourself, see our instructions in *The Portable Paper* Vol. 3, No. 1, pp. 12-14.

If you want our trained technicians to do it for you, call to schedule an appointment, then send us your Portable Plus and \$250.

(This covers the cost of de-soldering the Harris 80C86 processor and replacing it with the faster NEC V30, increasing the clock speed from 5.33 MHz to 8 MHz, and

returning your computer to you via UPS surface. If you prefer overnight return shipping, add \$35.)

In most cases, we'll perform the upgrade and ship your computer back the same day we receive it. In all cases, we guarantee our work for 60 days.

Please note: This upgrade will void your HP warranty, and HP will be under no obligation to service your Portable Plus in the future. However, we will continue to service upgraded machines, and HP repair centers may, in fact, do the same.

This "FastPlus" upgrade will make your Portable Plus more than twice as fast as the original IBM PC—that's even faster than the HP Portable Vectra!

To save time running your spreadsheets, editing your documents, loading programs, saving files, and almost anything else you use a computer for, order the "FastPlus" upgrade today. You'll appreciate the difference it makes!

"FastPlus" upgrade for Portable Plus \$250.
PRODUCT NO. FALING
(Be sure to call first to schedule an appointment.)

Overnight return shipping . . \$35.

Airport Security Appreciates HP Portables

110 I fly about every four to six months. On a recent trip for the first time (both coming and going) security personnel expressed appreciation for my HP Portable. Both times they remarked on how quickly the computer came on. Obviously they were used to people either having to insert a floppy or waiting for a hard disk to boot up. ... yet another advantage to the HP110 and Portable Plus RAM-ROM disk-based technology. ■

Lap-Top Survival Kit

By Richard Hall

110 Travel is rough on computers but is motel power "wild"? Electronic Specialists, Inc. of Natick, Massachusetts, thinks so. To rectify the situation they've developed a survival kit that protects you from "WILD motel power" and provides an assortment of electrical outlet and phone jack adapters.

P+ **PV** **LS** **12** Motels use a large number of heavy duty motors and appliances. Air conditioners, refrigerators, televisions, lights, etc. These are constantly switching on and off and this can generate high voltage spikes and surges that can damage or impair the performance of a laptop.



Lap Top Survival Kit

POCKET PROTECTORS

The Survival Kit provides two surge suppressor/interference filters.

The AC Line Filter/Suppressor protects against a 39,000 surge amps for 1 pico-second (about three times the capacity of an off-the-shelf suppressor, at about three times the price).

The Communications Enhancer uses Balun Filter technology to reduce Low Frequency, Common Mode electrical noise interference when using your modem with phone lines. A radio frequency filter reduces radio, TV, police, and CB interference as well as naturally occurring RFI.

Both Pocket Protectors are sold separately.

ELECTRICAL OUTLET AND PHONE JACK ADAPTERS

The Lap-Top Survival Kit also provides solutions to most of the connection problems you might run into by including the following adapters:

- Two- to three-prong electrical;
- One- to three-outlet adapters;
- Alligator clip to phone jack ;
- Alligator clip to phone plug;
- RJ-11 "tee" (1 to 2 jack);
- Four-pin to RJ-11 jack;
- 25 foot modular extension cord;
- Grounding Cable.

IS ALL THIS STUFF NEEDED?

Not under ideal circumstances. For example, Westin Hotels and Resorts has all of their rooms wired for single modular jacks. Some Westins in larger cities have installed double modular jacks in their rooms for modem operation. I don't know whether any hotels, motels, or resorts have surge protectors installed.

On the other end of the scale is The Dew Drop Inn, Motel, and General Store in Black Rock Idaho. The phone system there is 30 years old and each phone is wired directly to the phone line. The motel is right next to Ralph's Small Motor Repair Shop, across the street from Idaho Power's main transformer station, and located half a mile from the largest AM radio transmitter in the tri-state area. And then there's everything in between.

If you know where you'll be staying, a quick phone call to the facility should let you know what to expect. If you're not sure where you'll be staying, or if you know and wish you didn't, it's best to be prepared.

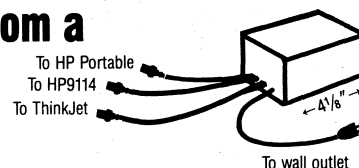
RECOMMENDATIONS

All of the items provided in the Lap-Top Survival Kit are handy and useful for a specific problem. But you can only spend so much time, energy, and money on being prepared. Here are some recommendations:

1. If you're on the road a lot and find yourself staying in rougher facilities where power and phone line problems exist -- CONSIDER BUYING THE COMPLETE KIT. NOTE: If you travel abroad, particularly in third-world countries, best be prepared for the worst!
2. If you're a frequent traveler who generally stays at an up-to-date facility that caters to business travelers -- THEN CONSIDER BUYING THE COMPONENTS LISTED BELOW, AS NEEDED.
3. If you experience a lot of disconnects, garbled messages and erratic communications while using your modem, you are probably the victim of electrical noise interference -- CONSIDER PURCHASING THE POCKET PROTECTOR COMMUNICATIONS ENHANCER.

Electronic Specialists tell us that the Pocket Protector

Power your Portable, ThinkJet, and HP9114 from a single wall outlet.



Can't plug your Portable, ThinkJet, HP9114, and HP hand-held into the same wall outlet because the recharger cubes are too big? Here's the solution:

The Power Cube/Recharger from Personalized Software.

The Power Cube has four power cords. Three are HP cords that plug into your HP Portable, ThinkJet, HP9114 disk drive(s), or HP hand-held (HP41, 71, 75, series 80, etc.).

The fourth is a conventional AC cord that plugs into the wall and powers the other three.

Get rid of that tangle of extension cords, power strips, or whatever else you've been putting up with.

Order a Power Cube/Recharger today.

Power Cube/Recharger \$89.95
\$79.95 for Portable Paper subscribers.

© Copyright 1987 Personalized Software

has a more effective filter than off-the-shelf models. It also costs more.

4. Cliff Harvey, Personalized Software's used equipment technician, took his Portable Plus along with him on a weekend National Guard 'cookout'. He tells me they have a mean diesel generator that spikes and surges whenever an officer walks by. In this, or any "WILD power" situation never leave the computer connected to a power source or telephone line any longer than necessary. If you must do so, or must leave your computer charging or connected to a telephone line for an extended period of time (while there is a chance of "wild power") -- USE BOTH POCKET PROTECTORS (Communications Enhancer and AC Line Filter/Suppressor), or other surge protectors.

NOTE: The above is especially true in the case of electrical storms, the wildest of any "WILD Power" situation. The vast majority of power surge damage happens in an electrical storm and a direct strike is likely to jump over any surge protector. If you know a storm is coming -- !!ALWAYS!! DISCONNECT YOUR COMPUTER AND/OR AC ADAPTER, AND ANY OTHER DEVICE YOU WANT TO PROTECT.

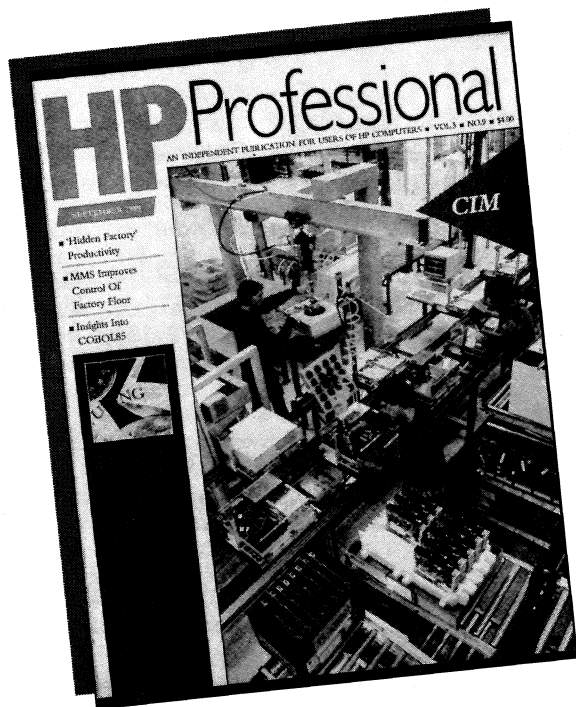
Some travelers like to access their desktop via laptop and modem. If this is the case, you must leave your desktop connected to power and telephone lines. If there is the slightest chance of an electrical storm, or other "wild power" -- USE THE POCKET PROTECTORS, or other surge protectors.

5. The assorted outlet and phone jack adapters can come in handy, especially at rougher facilities. Of the bunch, you'll end up using the following more often:

- 3- to 2-prong plug adapters;
- 25-foot phone extension cord (expands 1 modular phone jack to 2 jacks);
- screwdriver (standard & phillips);
- alligator clip to RJ-11 plug adapter (particularly handy for working with phone headsets that are wired in, with no RJ-11 jack).

The following additional items are included in the kit:

FREE SUBSCRIPTION OFFER



If you're a Hewlett-Packard computer user, and buyer of HP-related hardware, software, or peripherals, HP Professional, the monthly magazine for Hewlett-Packard commercial and technical computing, is for you. It's a free source of valuable information that will help you do your job.

It's Informative.
It's Monthly.
It's Read by over 35,000
Professionals Like You.
It's FREE!

Read HP Professional for information and insights on the latest hardware, software, trends and developments.

Start your free subscription today . . .

Send us the coupon below. You'll receive a subscription application in the mail. Fill out and mail the application to qualify for your free subscription.

HP Professional HPN SUBSCRIPTION APPLICATION REQUEST

YES, I'd like a FREE subscription to HP Professional. Send a subscription application to:

Name _____ Title _____
Company _____
Address _____
City _____ State _____ Zip _____
Telephone () _____

Mail to: HP Professional, P.O. Box 616, Horsham, PA 19044-0616.
Or call Lori Ulbrich at (215) 957-1500, or FAX (215) 957-1050.

- diskette pen;
- 4-pin to RJ-11 jack adapter;
- outlet adapter (converts one outlet to three);
- alligator clip to RJ-11 phone jack;
- carrying case.

There are a lot of small items in this kit. If you're not careful, you'll leave something behind.

COST COMPARISON

It's difficult to do a cost comparison on the two Pocket Protectors. They cost about three times as much as off-the-shelf surge suppressors, but claim to be more effective. I deducted the price of the two Pocket Protectors from the retail price of the kit to determine the total cost of the additional adapters, screwdriver, pen, carrying case, and instructions (\$39.05). Then I took the kit's adapters to my local Radio Shack and priced comparable items. The total Radio Shack cost (minus the price of the carrying case and instructions) was \$26.08 plus tax.

Voltage spike protectors cost between \$10 and \$20 (Pocket Protector, \$64.95) but were not rated as high in surge amp capability and have limited filtering.

Communications line spike/surge suppressors were \$12.95 (Pocket Protector, \$45.95). The Pocket Protector has better filtering capabilities.

ORDERING INFORMATION

The Lap-Top Survival Kit and Pocket Protectors are available through Electronic Specialists, Inc. of Natick, Massachusetts, Phone: 800-225-4876. The complete Kit retails for \$149.95.

SUBSCRIBERS CAN SPECIAL ORDER the Lap-Top Survival Kit through Personalized Software for \$142.95. Please call us at 515-472-6330, or FAX us at 515-472-1879. ■

Cover the Hole in the High Density Disk

- 110** Reader Gerald Fuller reports that he can read a high density disk formatted for 720K in his HP9114B but not his HP9114A from the Portable Plus. Just cover the hole in the disk. ■

Laptop Car Seat

- 110** The Laptop Car Seat by Zirco is "...like a child's car seat, except it holds a laptop."

P+ The car's seat belt and a hook in the Laptop Car Seat secure it to the front passenger seat. Lips on the front and side of the "seat," a strong elastic cord and strips of velcro secure portables up to 15" wide and 20" deep.

PV The Laptop Car Seat was developed by a designer of ergonomic furniture for stability, comfort, and convenience. If you're tired of having your portable slide around when you hit the breaks, it's a good investment.

LS 1/2 For the price of the Laptop Car Seat, people protect laptops or other expensive equipment. The real payoff for users comes from increased productivity. With a readily available computer, a person can do most of his/her work in the car. The time savings is large.

ORDERING INFORMATION

The Laptop Car Seat is available through Zirco, Inc. in Wheat Ridge, Colorado, phone: 303-421-2013. Retail price is \$79.95.

SUBSCRIBERS CAN SPECIAL ORDER the Laptop Car Seat through Personalized Software for \$75.95. Please call us at 515-472-6330, or FAX us at 515-472-1879. ■

Small, High-Performance Hard Disks from Conner

- 110** Conner Peripherals, a company that specializes in compact hard disks, has developed three new hard drives:

- P+**
- PV**
 - The Kato Series is a 2.5-inch pocket-sized hard disk with "20MBs of low-power storage in an ultra-small, ultra-light, portable package;"
- LS 1/2**
 - The Stubby Series consists of a 20 or 40MB quarter-height drive that will "let designers pack their new laptop and notebook designs with desktop performance...;"
 - the Hopi Series includes a 120MB, 1-inch high drive, the industry's highest capacity 1-inch drive according to Conner. ■

(Letters, continued from page 5.)

3. I have a 1989 subscriber's disk, through *The Portable Paper*. I want to know how to use it. For example, with BOXES you suggest that you merge the file, how does one do this? How does one merge the file into

MemoMaker and start to use it?

Moreen Chater
Jalisco, MEXICO

[A product we distribute called 101 Macros for Lotus 123 contains a macro which will allow you to print your names and addresses to labels. (\$69.95, \$62.95 to subscribers.) 101 Macros comes with clear instructions and installation procedures.

I don't understand why **f1** doesn't give you a help menu from within Lotus. You might try the self test described in the 110% article on hidden keys for the HP110 and Portable Plus, page 8, to see if there is something wrong with the Lotus ROM.

MemoMaker provides a clumsy way for merging files. First use **Block Keys** and **Copy Block** to block out the entire

file (or part of file) you want to merge. Then **Get** the second Memo that you want to merge. Finally use **Paste Block** to paste the merged text into the second memo -- Hal.]

Using TermPlus with CompuServe

I recently acquired a subscription to CompuServe (CIS) and am now using TermPlus in my Portable Plus to make connection. I have logged on several times with no problems, except for upload/download activity. Here I have been completely unsuccessful. Using the standard 7-bit, even-parity configuration, repeated ASCII transfers from my terminal to CIS using their CompuServe B+ Protocol always end in: ? FTRUIT - Unable to initialize transfer.

Previously, I tried uploading to EasyPlex (menu3) and just prior to submitting my file name, I would select F5 with TermPlus and then submit my file name. This always locked up the transfer process with no CTRL Key functionality. Also, there would be a 5 minute wait before CIS would issue a code - 4 error.

I used the feedback option with a description of my problem but the response was lack of familiarity with my communication program.

All other aspects of CIS activity are working, such as sending messages, etc. Therefore, I think I'll need help from some source with specific instructions on doing such transfer activity. I feel the TermPlus writeup is not clear in this area.

Any CIS user could send me a message with my ID as: 73777,1334, if they can

recognize my problem. I'm sure it's very simple.

Howard M. Snapp
Waukesha, Wisconsin

[TermPlus does not know about CompuServe B protocol. You must upload and download files using XMODEM or ASCII -- Hal.]

ZEMM.SYS Question

The DEVICE=ZEMM.SYS 736 in my CONFIG.SYS file (1990 Subscribers Disk) is super. However my LS/12, having 2MB of RAM, also has LIM EMS 4.0. When I replaced the EMM.SYS with ZEMM.SYS, the EMM version is now listed as 3.0 instead of 4.0 when I run the SYSID.EXE program. Will it be possible to 'upgrade' the ZEMM.SYS program?

Ole Wergeland
Reading, Pennsylvania

[As far as I know, there is no new version of ZEMM.SYS available -- Hal.]

Print Lotus Graph Without Going Through Graph Save & Print Graph Routines on HP150

The following is a procedure for obtaining a graph (one only) from Lotus 123 without going through the GRAPH SAVE & PRINTGRAPH ROUTINES normally required. The routine is straight forward although limited to one-at-a-time "Screen Dumps."

1. **LOAD** - 123.
2. **LOAD** - worksheet with information for the graph.
3. **CREATE GRAPH** - User process and development of graph.

4. **VIEW GRAPH** - This is one of the Important steps. It is not necessary to SAVE the Graph for the DUMP; **EXIT 123** - using normal exit procedure.

5. **LOAD DOS** - using normal procedure.

6. **[control minus]** - Hold down the [CTRL] key and press the [-] key. The "minus" key is to the upper right of the numeric key pad. This operation works as a toggle between the "Num Pad" and "Grph Pad" on the Status line.

7. **Grph Pad** - Should be displayed at the bottom of the screen.

8. **[CTRL Enter]** - Hold down the [CTRL] key and press the [Enter] key. The enter key is to the right of the keypad. IT IS NOT THE "RETURN" key.

9. **KB Locked** - Keyboard will be "LOCKED" during the graph printing.

The ThinkJet printer will print the Graph that was "VIEW"ed while in the LOTUS program. The printing speed will be as if the ThinkJet is in a normal text mode (faster than PRINTGRAPH). The graph will be the half-height type and consist of the fonts and sizes shown during the "VIEW". Upper and lower-case are readable.

10. **Num Pad** - Toggle with the [CTRL] & [-].

I think this is an "UN-DOCUMENTED" feature. Someone with a firmer grasp of the internals of the HP might be able to produce a utility to take advantage of the quick and dirty routine.

Keep up the good work on maintaining the 150 users connected to the IBM stuff.

John H. Foster
Tulsa, Oklahoma

HP110/HP110+ USER GROUPS

822-1372. **Maine**, Yarmouth, Every last Tues 6:30, US route One, Yarmouth, ME 04096, 846-5497. **North Carolina**, Charlotte and Surrounding Area, John Jacob, 704-334-3468. **Texas**, Houston, Thomas R. Page D: 713-759-4259 E: 713-528-7138. **Utah**, Utah County, Donna Hoover D: 378-4421, E: 375-4812. **Washington**, Eastern Washington, Northern Idaho, Western Montana, and possibly Western Washington, Bob Sandberg, 509-466-4999. **Eastern Washington**, Stephen S. Warner, D: 509-534-1588, E: 509-535-3322. **Western Washington**, Portable Plus, 150 and Vectra users meet first Thurs 7-9 pm, HP sales office, Bellevue, Pete Ross, 206-342-8875. **Portable**, 40 & 50 Series: 7-9pm second Wed., U.Wash. computer center, Seattle, Bob Moore, 206-543-7879. **Washington D.C.**, Greater Washington D.C. area, 8:00 pm, Third Monday of each month, Ballston Tower #1 800 N. Quincy St., Room 519. Call to confirm and say Hi. William F. Cross, D: 202-696-4112, E: 703-845-9508. **Australia**, 8 Avoca St. S. Yarra, Victoria, Australia, Nigel S. Ball. 03-267-8344. **Central America**, I would be happy to form a users group, either Spanish or English, Apartado Postal 1587, Tegucigalpa, Honduras. **England**, HP Computer Users Association LTD, Cunningham House, Bessborough Road, Harrow, HA1 3DX, United Kingdom, 01-423-3313. **Japan**, I would like to help start a users' group. Michael Lazarin, 26-26-502 Moto Ujina; Minami-ku, Hiroshima 734. **Netherlands**, Mr. R.M. Franquiner, Menthenbergseweg 13, NL-6816 PR, Arnhem, The Netherlands. **Spain**, Club de usuarios HP 110, Pont Reyes S.A., A la atención de D. Enrique Serra, Ronda Universidad, 15, 08007, Espana. **Sweden**, Stockholm, first Thurs each month 6:30 pm, call to confirm. Jens Pettersson, 08-713-1710. Telex 149 70 gentel S.

WordPerfect 5.0 (and) 4.2 for

You don't need an IBM PC to run the world's best-selling word processor. Now you can use industry-standard WordPerfect on your HP150 or Portable Plus!
P.S. We even have a Portable Plus version that's partly on ROM!

WordPerfect. It's the world's best-selling word processor for the IBM PC. Most reviewers feel it's the best word processor on the market.

WordPerfect not only performs all the usual functions you would expect from a full-featured word processor, such as:

- search and replace
- cut and paste
- automatic page numbering
- headers and footers
- bold, underline, compressed, expanded, italic
- superscripts and subscripts
- automatic hyphenation
- right justification
- undeleting of deleted text
- and more,

but it also offers a carload of advanced features—such as:

- Text in Columns
- Footnotes, Tables of Contents, and Indexes
- 115,000-word Speller
- Thesaurus
- Mail-Merging
- And built-in Math functions for creating a mini spreadsheet anywhere in your document.

Best of all, **you can run the complete WordPerfect on your Portable Plus or HP150 Touchscreen.** (Depending on the kind of Portable Plus or HP150 you have, you can use either WordPerfect 4.2 or the new 5.0.)

To learn more about the world's most advanced word processor—and how to use it on your HP computer—read the information on these two pages. Better still, try our Portable Plus or HP150 version of WordPerfect for yourself *at our risk.*

Order WordPerfect today, and put it through its paces.

Use it to format documents in a fraction of the time it took you before.

Use it to track down spelling errors and typos in a flash.

Use it for footnotes, mail merging, database sorting, or any of its other advanced features.

Use it for your daily correspondence or for generating the most complex reports you can think of, complete with numerical tabulations and text in columns.

If, within 60 days, you feel that WordPerfect isn't everything we say it is—or if you are dissatisfied with WordPerfect *for any other reason*—simply return it and we'll send you a full refund.

	Product Number	Retail Price	Subscriber Price
WordPerfect 5.0 for the Portable Plus (includes PlusPerfect)	WD17NS	\$645	\$395
PlusPerfect	WD14NS	\$150	\$129
WordPerfect 5.0 for the Portable Plus, with ROM Backup (includes WordPerfect, PlusPerfect, Backup ROMs)	WD11NK	\$940	\$595
WordPerfect ROM Backup*	WD12NR	\$295	\$295
Wordperfect 4.2 for the Portable Plus	WD14NS	\$435	\$339
WordPerfect 5.0 for the HP150	WD13NS	\$495	\$395
WordPerfect 4.2 single-sided for HP150	WD12NS	\$435	\$339
WordPerfect 4.2 double-sided for the HP150	WD11NS	\$435	\$339

WordPerfect Upgrade Kit (Upgrades Personalized Software Portable Plus or HP150 version 4.2 to 5.0)

..... Call us for pricing and other details.

* Requires proof of purchase of WordPerfect 5.0 and PlusPerfect, and written confirmation that you will honor the WordPerfect license agreement.

Here's What You Get

Here's what you receive when you order the Portable Plus or HP150 version of WordPerfect (published exclusively by us). Note: See box below to determine whether you should buy WordPerfect 4.2 or 5.0.

1. Complete WordPerfect software and Users Manual

The entire IBM PC version of WordPerfect (on 3½" disks) and the standard WordPerfect users manual.

2. Special utility programs

Our versions of WordPerfect 4.2 and 5.0 both come with an IBM PC emulator program that allows WordPerfect to run on your HP computer. (The Portable Plus version of this emulator is called PlusPerfect.) Our disks also include "batch" files that allow you to run WordPerfect automatically.

3. (Optional) ROM Backup for Portable Plus

6 ROM chips containing PlusPerfect and a significant portion of WordPerfect 5.0. (You can use 4 or 6 of these ROMs, depending on the amount of space available in your ROM drawer.)

Although you'll still need to store a 300K WordPerfect file on your disk and set main memory to 376K, this ROM Backup saves you up to 384K of RAM.

To purchase the ROM Backup, you must already own (or order) WordPerfect 5.0 and PlusPerfect on disk.

4. Instruction booklet

In addition to the comprehensive WordPerfect users manual, we supply our own instruction booklet. It tells you, step-by-step, how to get started, what to ignore in the users manual, and how to use WordPerfect on your HP computer.

5. Keyboard template

We also include a convenient 4-color keyboard template that we've designed specifically for the unique keyboard layout of your Portable Plus or HP150. The template shows you, at a glance, which keys to press to execute each of WordPerfect's functions.

60-DAY MONEY BACK GUARANTEE

See order form for details.

TO ORDER

Use enclosed postage-paid order form or send check or credit card information

(# exp. date, signature) to:
Personalized Software
P.O. Box 869, Fairfield, IA 52556 515/472-6330

the Portable Plus and HP150

Frequently Asked Questions

(If you have additional questions, don't hesitate to call us!)

Q. Are the Portable Plus and HP150 versions of WordPerfect identical to the IBM PC version?

A. WordPerfect 5.0 and 4.2 are identical on all three machines, except:

- a.) the on-line tutorial does not run on the Portable Plus or HP150. (However, the "learning" section of the users manual covers the same material as the tutorial.)
- b.) the "Preview Document" feature (which shows special fonts and graphics as they will appear on printing) functions in a limited way.
- c.) Some extra, unessential utilities that come with WordPerfect do not run on the HP150 or Portable Plus.

With both 5.0 and 4.2, if you already know how to use WordPerfect on an IBM PC, you can use the HP version right out of the box.

Q. Can I transfer WordPerfect files back and forth between different versions of WordPerfect and between my HP computer and an IBM PC?

A. Yes to both.

WordPerfect 5.0 has a built-in transfer utility that makes sharing files between versions of 4.2 and 5.0 easy.

Moreover, WordPerfect produces identical files on an IBM PC, Portable Plus, and HP150. The only difficulty that may arise in transferring files between these machines is that HP and IBM computers use different formats. If you don't already have the ability to accomplish the transfer, you can either use our Disk Conversion Service or a variety of hardware or software solutions, depending on your system. For details, see "File Transfer Made Easy," in our product listings in this issue.

WordPerfect 4.2 or 5.0—Which Should You Buy?

To determine which version of WordPerfect to buy—4.2 or the new 5.0—follow these steps:

Step 1. Assess your needs.

Please see the column, "WordPerfect's Newest Version" (at top right) to learn about the features that are unique to Version 5.0. If you need these features, then 5.0 is the version for you, provided your machine can run it (see below).

Step 2. Check your memory size.

Portable Plus:

To comfortably run Version 5.0, you'll need a

Q. Where can I get assistance in using WordPerfect on my HP150 or Portable Plus?

A. If you have a problem related to the HP150 or Portable Plus—or if you're not sure where the problem lies—call us. If you have a question about how to use a WordPerfect feature, call WordPerfect Corporation. They are famous for the calibre of their customer support, and you can call them toll-free.

Q. Will the HP version of WordPerfect work with my printer?

A. Our instruction booklet tells you how to run WordPerfect with all printers that work with your Portable Plus or HP150, including serial, parallel (Centronics), HP-IB, and HP-IL.

WordPerfect in Brief

Here are some of the advanced features that have made WordPerfect the world's number-one selling word processor. (These features are common to WordPerfect 4.2 and 5.0).

Speller

WordPerfect's built-in spell-checker is fast, thorough, and easy to use. The main dictionary contains 115,000 words, and you can add words of your own to one or more auxiliary dictionaries. The Speller also counts the number of words in a document or in any block of text.

File merging and mail merging

With WordPerfect, it's easy to produce personalized form letters (mail merging), and to assemble reports, proposals, and contracts from pre-written components.

Thesaurus

WordPerfect's Thesaurus helps you find the right word when you need it. Synonyms are grouped by noun, verb, and adjective, and at the touch of a key, you can look at second and third levels of alternatives.

machine with at least 896K of RAM (e.g., a 512K Portable Plus with a 384K RAM drawer, or a 128K Portable Plus with two 384K RAM drawers).

With an 896K machine and our ROM version, you can run WordPerfect without an HP9114 disk drive. Otherwise, with an 896K Portable Plus, you need to load WordPerfect from the HP9114. Once you load WordPerfect, you no longer need the HP9114 to run WordPerfect.

To comfortably run Version 4.2, you'll need a machine with 640K of RAM.

You can run either version of WordPerfect with just 512K of RAM if you're willing to do a lot of disk access from your HP9114.

Columns

WordPerfect's Columns feature is ideal for writing a newsletter, glossary, script, or any text that requires columnar format. Up to 24 columns can be formatted in either newspaper style (snaking) or parallel style (side-by-side). The columns appear on the screen exactly as they will print on the page.

Footnotes and endnotes

WordPerfect streamlines the task of creating and editing footnotes and endnotes. Just enter information at the appropriate spot, and WordPerfect takes care of numbering and formatting—including allowing just the right amount of space at the bottom of the page. If you later add or delete a note, WordPerfect will automatically renumber the others.

Table of contents

Mark portions of your text, specify a format, and WordPerfect will automatically generate a Table of Contents and an Index for your document.

Math

WordPerfect lets you use 4-function math for calculations across columns and for subtotals, totals, and grand totals down columns, anywhere in your document. Whenever you change a number, WordPerfect updates the totals. It's like having a mini spreadsheet at your fingertips—without leaving WordPerfect.

Sort

You can sort lines, paragraphs—even external database records—from within WordPerfect. You can apply logical rules to the sort: It's easy, for example, to generate an alphabetized list of all customers in California who have purchased more than \$100 worth of merchandise within the last 6 months.

Note: You might consider purchasing a 1 Megabyte RAM drawer for your Portable Plus. This would let you bring the superb WordPerfect speller module wherever you go without having to load it in from an external disk drive. And with a megabyte of extra RAM, you'd have lots of room left over for text files.

HP150:

To run Version 5.0, you'll need 512K of memory and a double-sided disk drive.

To run Version 4.2, you'll need 256K of internal memory and either a double-sided or single-sided disk drive. (Note: If your HP150 uses single-sided disks, you'll also need a hard disk drive to run Version 4.2. Neither version of WordPerfect will run on a dual-floppy single-

WordPerfect's Newest Version

Here are the main features that have been added to WordPerfect in upgrading it from Version 4.2 to 5.0:

Fonts and printing

WordPerfect 5.0 lets you set margins, tabs, etc. using inches, centimeters, and points. Fonts may be freely mixed and changed without affecting margins, tabs, or column definitions.

Integrated text and graphics

WordPerfect 5.0 lets you insert graphic images from most graphics programs directly into your text. You can enlarge, reduce, move, and rotate most images to your specifications.

Styles

You can combine text and codes to create a specific "style," or format, that you can then use over and over again (for chapter headings, subheadings, etc.).

Document compare

WordPerfect 5.0 will compare the on-screen document to an existing document on disk. Text that has been added will be "red-lined" (marked with a vertical bar in the left margin), and text that has been deleted will be shown in "strike-out."

Keyboard redefinition and macros

WordPerfect 5.0 lets you store any sequence of keystrokes so that those keystrokes will be executed upon the press of a single key. This "macro" feature allows easy entry of repeated text and commands. One way to use macros is to change the key assignments for WordPerfect's features. There is no limit to the number of different keyboard layouts you can thus define.

sided HP150 system.)

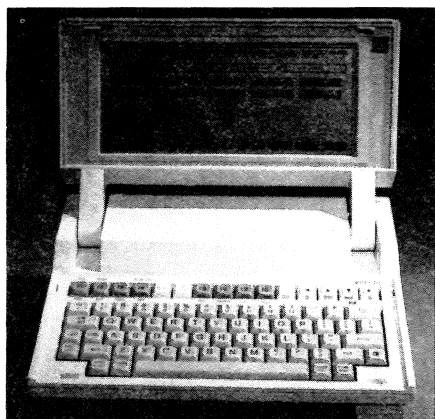
Our recommendations:

In general: Choose WordPerfect 4.2 if: (a) your machine demands it, or (b) you're already using 4.2 on other machines and don't intend to upgrade, or (c) you wish to save some money and don't need the new features in WordPerfect 5.0.

On the other hand, if you want those new features and your machine can handle it, WordPerfect 5.0 is the one you should get. If you use a Portable Plus, you'll tie up the least amount of RAM if you purchase our ROM Backup version of WordPerfect 5.0.

SALE OF A LIFETIME!

ALSO:
HP Portable
software and accessories—
at up to 77% off!



Like-new
HP Portable Plus:
~~\$2795~~ **only \$1295**
used \$895.

**One of the greatest computers ever made—
at the lowest price ever offered!**

**Order now—
supply is LIMITED!**

- 30-day No-Risk Trial
- Free Technical Support
- Free Shipping
on all U.S. orders
- One-year Guarantee
on all equipment, like-new and used
- No Sales Tax
if you're outside Iowa.

Individual and volume buyers welcome. Call (800) 373-6114



Each like-new Portable Plus comes in its original packaging with new battery and new manuals. Personalized Software provides the one-year guarantee. (Personalized Software will honor the one-year guarantee. After the first year, you can have the equipment repaired by us or HP.)

We also buy and sell

used HP150 equipment and software.

We have WordPerfect for the HP150!

Call for details.

GREAT GIFTS!

HP Portable Plus and HP110 systems make wonderful holiday gifts for students, friends, co-workers, spouse, and children.



**Personalized
Software INC.**

Products that make HP Portables smarter

57 E. Broadway, Fairfield, IA 52556 (515) 472-6330

HP110 USERS:

Now's the time to upgrade to a 512K Portable Plus—only \$1295 like-new or \$895 used. If your HP110 is in good condition, we'll give you a **trade-in allowance**. Please call to discuss.

PORTABLE PLUS USERS:

You already know how great the Portable Plus is. Now is the best time to purchase additional Pluses for your company, friends, or family—at the lowest prices ever. Quantity discounts are available. Call for prices.

HP3000 USERS:

The Portable Plus makes an ideal terminal, allowing you to operate your HP3000 from anywhere you travel. Perfect for an automated sales force—more than 4000 Hewlett-Packard sales reps and field engineers use a Portable Plus as a terminal every day. See "HP3000 Terminal System" on the next page, and check our amazingly low prices—they're comparable to HP's manufacturing costs!

IBM PC/COMPATIBLE USERS:

Double the value of your PC: Add a Portable Plus to your system today—and take your work anywhere!

We offer a variety of Portable Plus systems that can communicate with your PC, allowing you to share files between the two computers at will. See "Low-Priced Sample Systems" on the back page.